

august

1958

**the
AMERICAN
SCHOOL BOARD
JOURNAL**



what can the
smaller high school
do to improve
its science
and mathematics
programs?

(see page 17)



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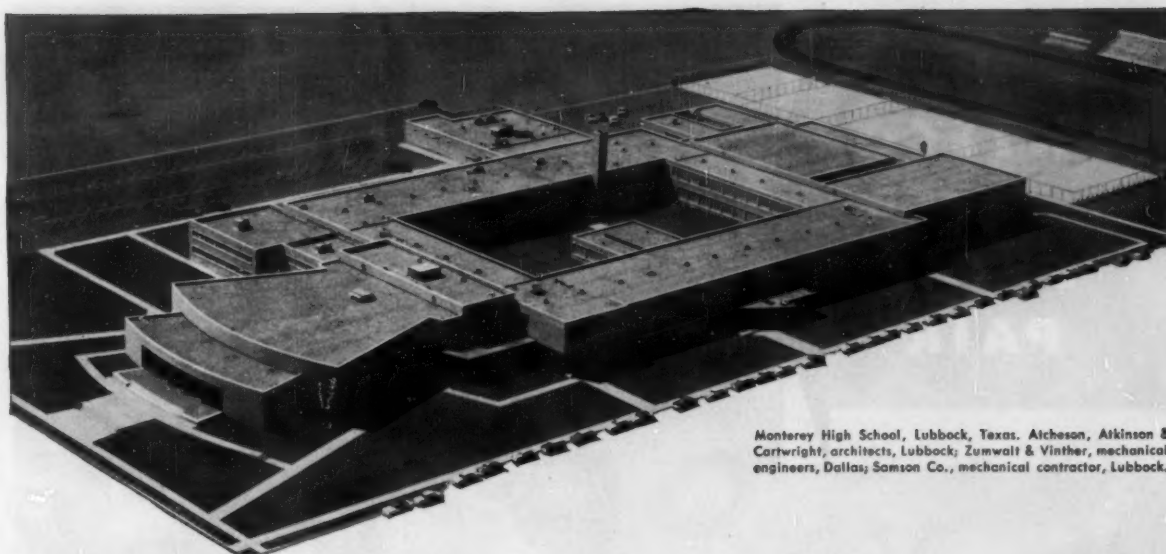
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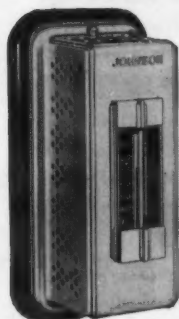
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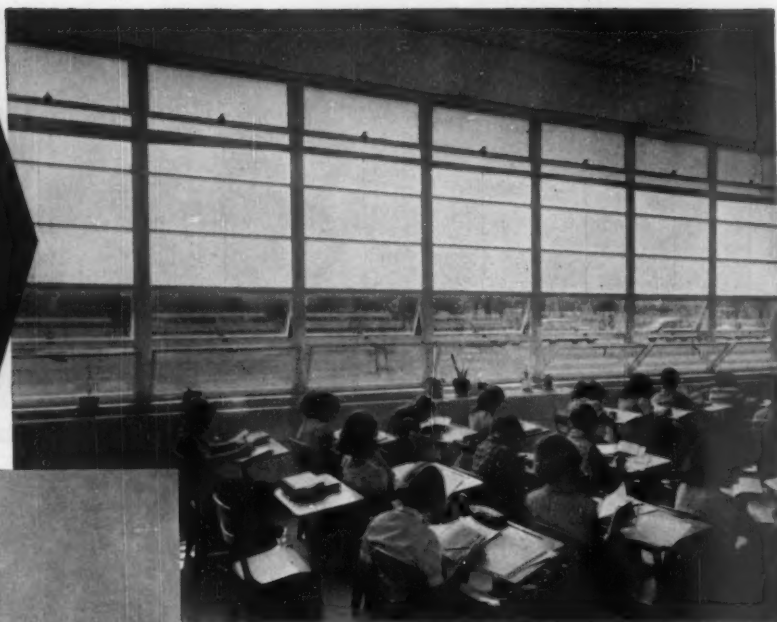
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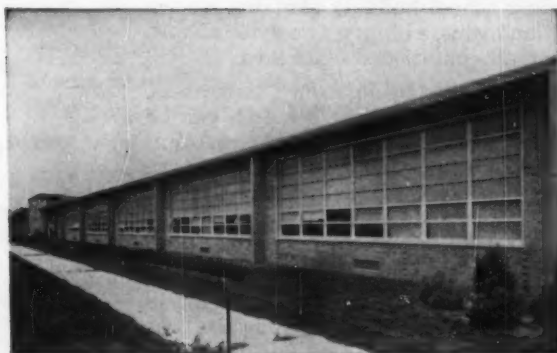
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Twin Virginia Schools Select Mississippi Diffusing Glass Pattern For Daylighting and Decorative Qualities

The many similar features in these two outstanding Norfolk, Virginia elementary schools demonstrate the old adage that a good thing bears repeating. Both employ Pentecor, glare reduced on one side, in upper sash, to achieve excellent daylighting without harshness or shadows. This handsome Mississippi pattern floods classrooms with softened, diffused light that makes seeing tasks easier for young eyes by providing the maximum in light distribution.

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THE AMERICAN School Board Journal

for August, 1958

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OUR COVER . . .

A wealth of suggestions on how to improve the science and mathematics programs in smaller high schools, where experienced teachers and extensive equipment are especially scarce, is presented (page 17) by a jury of educators and a scientist for troubled boards of education and their administrators.

A review of your JOURNAL for August (pg. 4) —————>

WILLIAM C. BRUCE, Editor

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● Leg stretchers of heavy gauge tubular steel securely welded to frame add strength, solid rigidity and permanent security. No. 101 at right shows complete shape and style.

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Your JOURNAL for August

The time for final preparation for September's perennial onslaught of teachers and pupils, August possibly offers the choicest occasion to pause, sit back, and contemplate for a few moments your role as an administrator in the advancing cycle.

With this thought in mind, we'd like to recommend an article in your JOURNAL for August that examines the task of the administrator in our modern, complex schools.

Roald Campbell, director of the Midwest Administration Center, questions the recent criticism (page 11) that states superintendents allow themselves to be "distracted" by staffing problems, provision of materials, etc., and do not concentrate on the instructional program alone. Many practicing superintendents, who might find their days fraught with these "distractions," may well suffer "guilt feelings."

Defining educational administration, Mr. Campbell indicates how such matters as basic "teaching and learning" policy formation, handling personnel and materials pertinent to the teaching and learning process, etc., all contribute to the improvement of the instructional program. The superintendent, therefore, who has discovered what it takes to create successful schools with a superior curriculum, should continue to do what they have in the past and not feel frustrated that they experience difficulty concentrating on instructional activities alone.

We believe you'll find the article a good delineation of the superintendency: administrators will gain insights into their job and board members will discover a lucid perspective of the functions of their administrators. Something well worth a share of your reading time!

As you page through this issue, we'll hope that you'll also review: (1) what to us seems one of the most calm and common sense approaches to merit rating (page 9); (2) what your schools must do to help your students acquire scholarship in terms of higher education (page 15); (3) Dr. Boles' fourth installment in his suggestions for school building economy, this one on how to save money on sites and site development (page 21).

There are eight other features in your August JOURNAL; and please don't forget the regular departments!

for September...

A review of several excellent programs for the gifted child that have proven successful in various-sized districts around the country should provide you with a wealth of ideas on how to provide for the mentally advanced in your schools.

The Editor

SUBSCRIPTIONS. In the United States, Possessions, and Canada, \$4.00 a year, payable in advance. Two-year subscriptions will be accepted at \$6.00. In all foreign countries, \$5.00, two years at \$8.00. Single copies, 50 cents.

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CHANGE OF ADDRESS. When you have a change of address kindly report it to us at once. Send us your old as well as your new address and be sure the Postmaster is notified. Postal regulations restrict forwarded service on magazines to two issues only.

EDITORIAL MATERIAL. Manuscripts and photographs bearing on school administration, superintendence, school architecture, and related topics are solicited and will be paid for upon publication. Contributions should be mailed to Milwaukee direct and should be accompanied by return postage if unsuitable. The contents of this issue are listed in the "Education Index."

A Florida firm designs school that saves money because it's AIR CONDITIONED

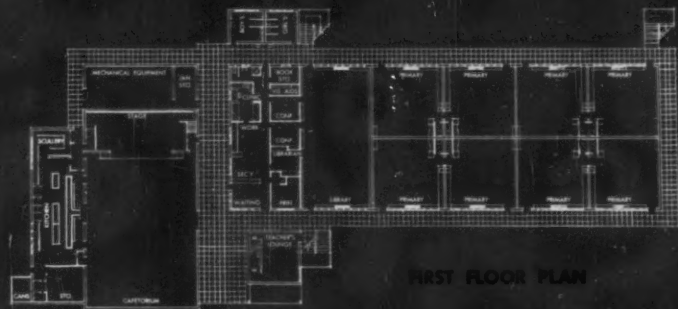
The design of a 20-classroom, 2-story urban Florida elementary school by Connell, Pierce, Garland and Friedman, Miami, Florida, factually proves that, in many instances, air conditioned schools can actually save money on capital investment and, at the same time, completely offset the increased operating cost of the air conditioning system.

HOW CAPITAL INVESTMENT IS SAVED—This school was designed for a densely-populated area of Florida. To take full advantage of natural cross-ventilation and avoid noise distractions, conventional schools have had to be spread out and sprawling. This required large plots. Since school boards have paid as much as 50 to 60 thousand dollars per acre for school property, total acreage is an extremely important cost factor.

Because of air conditioned design, this building consumes only 1.2 acres instead of the customary urban Florida total of 3.1 acres. Thus, 1.9 fewer acres are needed. The resulting capital savings are in direct proportion to the cost of land.



Compact, air conditioned design permits simple, uncluttered "footprint" plan, with space-saving outside access to second floor exterior corridor.



Classrooms are completely self-contained units except for feeding activity. Cafeteria contains folding tables that make benches for auditorium purposes. Additional chairs are stored under stage, which doubles as a special visual education room. Walkways are covered.

air conditioned school design

HOW OPERATING COST IS OFFSET—Normally, a school of this size requires four custodians. In this air conditioned design, dust conditions are alleviated to the extent that only three custodians could adequately handle the work. The resulting salary savings would bring the operating cost of the air conditioning system down to \$5 to \$10 per day.

Many state school laws (including Florida's) provide that incremental teachers' salaries be paid from State to County School Systems on the basis of average daily attendance, rather than enrollment. County taxes must make up the difference when there are mass absences. There is evidence to prove that attendance at an air conditioned school is from three to eight percent greater than at a non-air conditioned school. Thus, increased attendance would further reduce the cost of operating the air conditioning system.

CAPITAL SAVINGS

WHEREVER LAND COSTS EXCEED \$17,700 PER ACRE, THIS AIR CONDITIONED DESIGN SAVES MONEY

Savings made possible by (1) elimination of typical heating system (2) elimination of cross-ventilation breeze-sashes (3) reduction in size of main windows (4) elimination of top windows (5) use of plate glass plus only two operating windows (6) use of 9'-6" ceilings, and (7) use of only one door per classroom.....\$41,400
Cost of combined air conditioning and heating system, using Herman Nelson air conditioning unit ventilators.....\$75,000
Cost of air conditioning over and above saving.....\$33,600
Assuming cost of land to be \$25,000 per acre, using 1.9 fewer acres would save.....\$47,500
Actual capital savings directly attributable to air conditioned design.....\$13,900

OPERATING SAVINGS

INCREASED OPERATING COST OF THE AIR CONDITIONING SYSTEM IS OFFSET BY THE SAVINGS INHERENT IN AIR CONDITIONED DESIGN

Approximate operating cost per day of air conditioning equipment, allowing for days when only fans would be in operation.....\$30 per day
Elimination of one custodian at a salary of approximately \$3,000 per year, will reduce this to.....\$5 to \$10 per day
The percentage increase in average daily attendance would more than offset this operational cost.

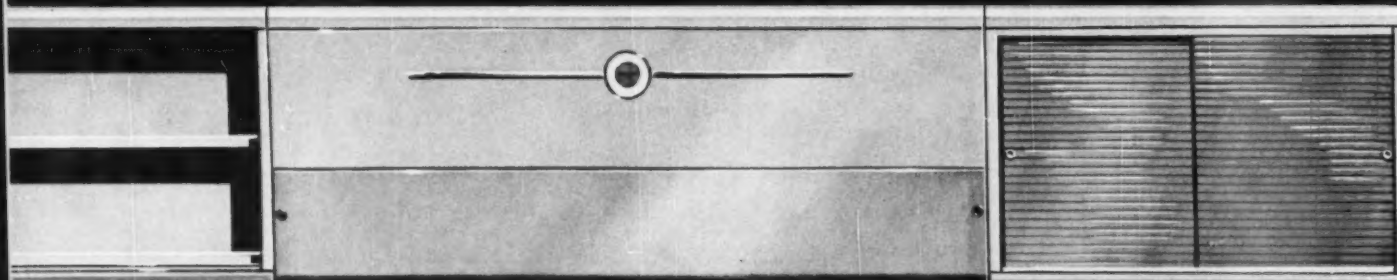
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System of Classroom Cooling, Heating and Ventilating



Surveying the School Scene

COMMITTEE APPROVES BILL

The House Education Committee yesterday informally approved a four-year \$660 million blueprint of Federal aid to education with emphasis on science.

The seven-point program, approved piecemeal by the committee today, falls short of the \$1,000,000,000 program the President had requested to improve teaching of science, mathematics, and foreign languages.

But it contained some additional features—notably a Federal loan program for college students. The cuts came chiefly in funds for high school science equipment.

It provides for Federal scholarships, loans to students, fellowships and matching grants to the states for science teaching equipment.

DERTHICK: INSIDE RUSSIAN SCHOOLS

Commissioner of Education Lawrence G. Dertthick, member of a ten-man cultural exchange team which recently completed a one-month tour of Russia, stated that education in the Soviet Union is "a kind of grand passion" through which that country expected to achieve its chief slogan "Reach and Overreach America." He warned that we could not afford to disregard "the challenge imposed upon us by the Russian race for knowledge."

Everywhere in Russia, he said, were evidences of a "burning desire to surpass the United States in education, in production, in standard of living, in world trade—and in athletics."

Dr. Dertthick said that the confidence of the educators in the better American schools had been strengthened by what they saw in their 7000 miles of travel in Russia. But the weaker and neglected schools here, he said, should be brought up to standard—and quickly.

INTEGRATION DELAY

On June 21, Federal District Judge Harry J. Lemley granted the request of the Little Rock, Ark., board of education for a delay of two and half years in the board's plan for gradual integration because of "intolerable" conditions in the city's Central High School. The N.A.A.C.P. has asked the Eighth Circuit Court of Appeals in St. Louis to reverse the ruling; its petition of the Supreme Court for an immediate review of the delay was rejected promptly.

The ruling would bar the seven Negro students now enrolled in the high school from returning in September.

In Dallas, Tex., the school board ordered the district's schools to remain segregated for the 1958-59 school year, due to the "apparent conflict" between the U. S. Supreme Court's integration decree and Texas school integration laws.

NEW CERTIFICATION PLAN

The University of Wisconsin's School of Education has proposed a plan for certifying teachers on the basis of demonstrated knowledge and skill. Designed to replace the pres-

ent, rigid pattern of specific courses in educational psychology, methods of teaching, class management, child behavior, etc., the teacher still would be able to qualify by means of the old pattern but would, in addition, have the option of taking examinations proving mastery of required material in three areas: (1) liberal education; (2) the subject she plans to teach; and (3) the learning process. On passing the exams she would be eligible to take a position as a probationary teacher.

"To put it simply," Dean Lindley J. Stiles explained, "we plan to recommend students for teacher certification on the basis of what they know and can do—to measure their general knowledge and scholarship and their teaching ability—rather than to require specific information that may be contained in any particular course."

REPORT CARD FOR SCHOOL SYSTEMS

A report card that rates school systems, not pupils, has been devised for those who want to know how good their schools are and what they can do to make them better. The measuring device, a 23-page check list, was developed by the Associated Public School Systems, an organization of 230-member school systems affiliated with the Institute of Administrative Research. The list, which shows how a school system compares with others, rates districts on such matters as community characteristics, financial support, spending policy and teaching staff—all factors that affect the quality of education—helping them to balance the complex factors of a successful educational program and help overcome weaknesses.

Entitled "APSS Report Card," the report card is available from The Associated Public School Systems at 525 W. 120th St., New York, N. Y.

SCHOOL MILK LAW PASSED

President Eisenhower signed the bill extending the school milk program for three years. Under this law, the government helps pay the cost of milk distributed to children attending participating schools, summer camps, etc. The Agriculture Department, which administers the programs, estimated that more than 75,000 schools take part in the distribution.

NEA SPLIT BY RACE ISSUE

The 101st annual convention of the National Education Association, held June 29 to July 4 in Cleveland, Ohio, was upset in its closing sessions over a motion, introduced by the New York delegation, to conduct "a study, a survey, and a report with recommendations" on integration. When it appeared that the motion might be approved, a member of the Georgia delegation moved to adjourn the meeting because there was not a quorum present. A tabulation by state chairmen indicated it was not, and President Lyman Ginger adjourned the meeting.

Miss Ruth Stout of Topeka, Kans., was officially named the new president of the NEA. Mr. Walter Eshelman of Upper Dublin Township, Pa., was named vice-president.

School Finance Problems

The National Conference on School Finance Problems, meeting at the LaSalle Hotel in Chicago, May 22-23, declared that schools are facing a serious financial situation and suggested a 13-point program:

1. There is a need for thorough studies of all tax systems at both state and local levels to reveal possible points of financial leeway for additional support of schools.
2. State legislatures must realize that increased financial support of schools will result in better education over the long haul. At the same time, local school systems should not have their hands tied on how to spend their funds, but should be encouraged to experiment and provide programs of excellence.
3. In periods of declining revenue, a state financial foundation for education should be an open-end program, in order that support of education need not decline and lead to inferior schooling.
4. Much greater numbers of the public must understand the basic issues involved in public education. More understanding must be gained about what constitutes "quality" in education.
5. To do the educational job well in the future will require some major new tax source. Thus, there is a definite need for federal support of education.
6. The public—and school board members especially—should be well informed about the processes of federal law making in order

that they can more fully understand that federal support need not mean federal control.

7. Schools must keep their managerial practices up to date, in order to operate efficiently. At the same time, citizens must realize that since schools produce people, they cannot operate on precisely the same economic principles as factories.

8. Taxes which usually remain stable even in times of depression, such as those on bank deposits, gasoline, tobacco, liquor, and horse racing, might prove helpful to education.

9. Realizing that the most popular tax is the one on somebody else, many states are taxing out-of-state residents. An example is the practice by some states of taxing all oil shipped out of their states.

10. Cost of living indexes might be applied to state-aid programs.

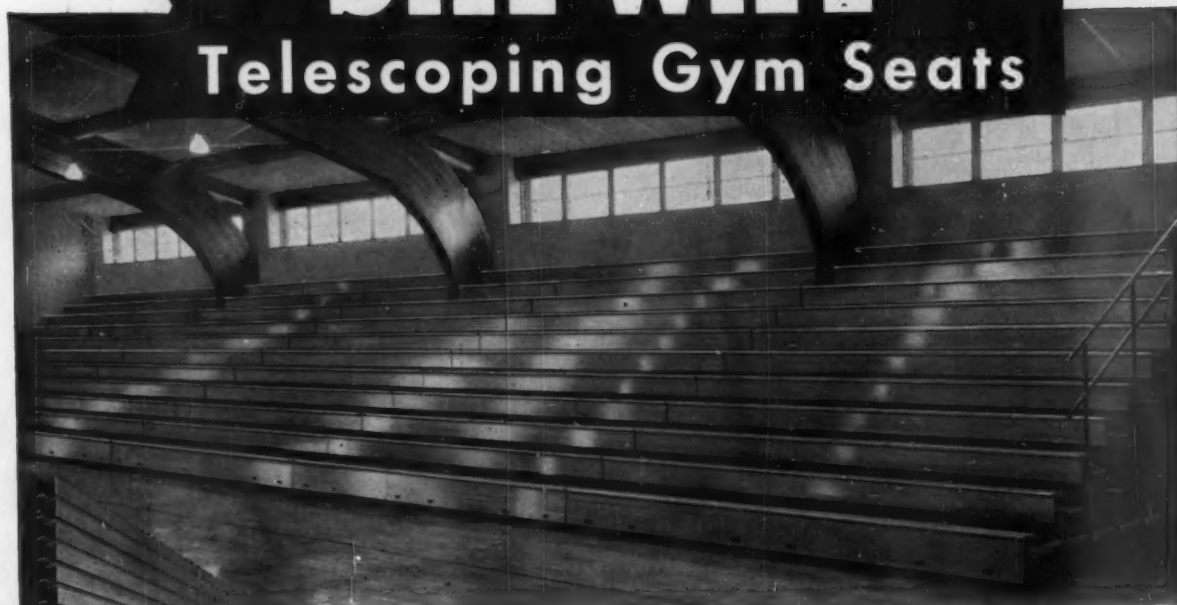
11. Both kindergartens and community junior colleges should be included in any adequate financial support to education.

12. Although the property tax is not sufficient to support education fully, it is a stable tax and should be used more efficiently. Assessments nearer true value are necessary, and districts which assess efficiently should not be penalized by states in the form of less state aid. Extra money obtained in this way can help provide excellence in education.

13. All tax sources should be considered. Schools in Pennsylvania, for example, receive partial support from 21 different taxes.

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Safway gym seats harmonize with the finest surroundings.



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YOU'LL really be proud of the appearance of your Safway gym seats . . . proud as you are of the superior vision, comfort and safety they provide for your spectators.

Extended or closed, the all-steel supporting structure is concealed under beautifully finished wood seat boards, foot boards and risers. The handsome natural grain shows through clear varnish, tinted to the rich, warm tone of Golden Oak.

When not in use, Safway gym seats telescope back into a self-contained "cabinet." Riser boards then line up vertically like fine wood panelling to give your gymnasium a clean, finished appearance.

You also benefit through important mechanical advantages built into Safway gym seats:

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Seat, foot and riser boards are laminated Douglas Fir, selected to virtually eliminate cracking or splintering. Boards are carefully sanded and eased on all sides, with corners rounded. There are no sharp projections. Hand holds in the front riser board are smoothly rounded.

For fine appearance and durability, boards are treated with Safway's high quality base sealer and finished in clear Golden Oak varnish. The finish is rich but scuff-resistant . . . lustrous but not slippery . . . easy to keep clean. It will harmonize with the finest surroundings.

COMPLETE SPECTATOR COMFORT—Excellent sight lines from every seat. Extra-wide seat and foot boards; ample foot and leg room.

SMOOTH, EASY OPERATION—Safway telescoping principle eliminates binding, minimizes friction. No costly power equipment needed.

STRONG, RIGID CONSTRUCTION—Steel, not wood, carries the load. 8 steel columns under each section row, with horizontal and vertical steel bracing.

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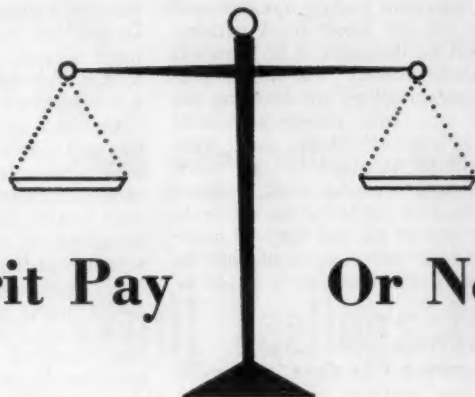
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To Merit Pay

Or Not to Merit Pay

**Some common sense
thoughts on what is still
one of education's most
thorny problems—**

CLARENCE HINES

Superintendent, Eugene, Ore., Schools

If one may deal lightly with Shakespeare, it may be said that:

To merit pay or not to merit pay
That is the question
If to merit pay, how to merit pay
That is the problem.

Current periodicals, both lay and professional, are presenting varying points of view on the subject of merit pay for teachers. These articles range from the description of a plan which has been tried and proved successful in some community to the doleful picture of what will happen to the morale of the teachers of America if merit pay plans are adopted. Even with the great abundance of articles published on this subject, there are still some things which need to be said on the less popular side of the question. The purpose of this paper is to offer some ideas for consideration by school board members and others who are giving thoughtful consideration to the subject of merit pay for superior teaching.

In the beginning, the writer must admit that he is now and has been guilty of using a merit pay plan for many years. For some time now, he has been paying superior teachers more than average or mediocre ones by resorting to a subterfuge. That subterfuge has been to promote superior teachers to administrative or supervisory positions where they may be paid more than

for doing a superior job of teaching. This has not always been in the best interest of teaching but it was the only way to reward them for doing a superior job. Most of them have turned out to be just as able in their new assignments so the practice has not resulted in a total loss to education.

Further, the writer is himself a victim of such rewarding by his former superintendents and school board members. Someone, as far back as a quarter of a century ago, thought they saw a spark of superior teaching and rewarded it with a supervisory assignment that carried a higher salary. Even his present contract has a merit clause, that the annual salary shall depend in part "on the quality of service rendered." Despite these things, however, the writer would never be a party to forcing a merit pay plan on a group of reluctant or unwilling teachers. To do so would, in his opinion, be contrary to good judgment and sound administrative practice. It would almost surely defeat a plan before it had been given a trial.

Compensation or reward according to the quality of service rendered is basic to the American system. The opposite is some kind of a guild system in which the leaders of the craft decide how much shall be paid and how much or how little shall be done to earn it. Although there is some evidence that certain teachers, and perhaps certain teacher groups, believe in this

"A... school board should not be denied the right to reward its superior teachers"

approach, it cannot be accepted as being in conformity with the American system of rewarding for the quality and quantity of work done or as being in the best interest of American children and their education. It is certainly contrary to the idea that teaching is a profession and not a trade or craft.

Two Objections

As one reads the various criticisms of merit pay plans, they appear to reduce themselves to two main objections. One is the alleged damage to teacher morale, that is to the morale of teachers who do not benefit from merit pay. The second is that there is no valid or objective method of determining superior teaching.

Morale, whether of teachers or any other employee group, is a very intangible thing. If loss of morale means that teachers will complain more under a merit pay plan than they would without one, many could certainly be against merit pay. It appears unlikely that this can be demonstrated, at least without a fair trial. Many who are now teaching or who are in responsible administrative or supervisory positions came up through the period when there were few salary schedules with automatic annual increments. Salaries were determined for the individual each year by those responsible for fixing them. The quality of the work done and the desire to retain the services of the individual teacher were the main considerations, not the fact that the teacher had served, however well or poorly, another year. The board and the superintendent, acting for the community, decided whether a teacher was worth keeping and whether he should be paid more or less according to his worth.

Teachers may have been less sensitive a quarter of a century ago than they are today, hence their morale was not so easily damaged. It may be, also, that the single salary schedule, with

its annual increments usually awarded on the basis of the individual being a year older, may have made teachers more morale conscious, more jealous, and more envious than they were under the older system where service to children was a strong motivating factor.

Perhaps the reason some who came up through that period are still in teaching and administrative positions today is that their morale was damaged and they did not know it. A person's morale will be damaged if he allows it to be. Unfortunately, leaders in professional organizations are directing the attention of their members toward morale by telling them that their morale will be damaged by any merit pay plan, hence no plan shall be given a trial. Teachers are being made morale conscious just as a child may be made pain conscious with the result that he will cry each time he gets a bump or a scratch.

Evaluative Procedures

The argument that there is no valid or objective method of determining superior teaching for the purpose of rewarding it with extra compensation is considered by some to be another smoke screen. To say that there is no valid or objective method is really to say "We lack confidence in the ability, judgment, and integrity of our administrators and school board." It is not quite to say that administrators and school boards are dishonest and will play favorites but it is to say that they cannot be trusted. First, there is doubt of administrative and supervisory ability to judge competency; and, second, of the integrity of the individuals who will have the responsibility for determining which members of the staff receive merit pay.

This is difficult to reconcile with the practice of teacher employment and retention. The administrator's ability to recognize a good teacher and his judg-

ment in selecting one is considered valid when he makes a recommendation to the school board that a teacher be employed. His judgment is valid when he recommends a probationary teacher for re-election and when he recommends tenure for a teacher who has served the required probationary period. Why, then, is his judgment suddenly invalid when he is asked to decide whether one teacher is more valuable than another? In the first instance, the teacher's job itself hinges on his judgment; in the second, only additional compensation of a few hundred dollars a year.

One can only assume, if administrators and school boards are able to determine quality of teaching for purposes of employment, retention, and permanent tenure, that the real crux of this argument is that administrators and school boards lack the integrity to deal fairly with teachers if called upon to award merit pay to some and withhold it from others. The fear is that favoritism will be shown. This assumes that the decision will be made by one man, the superintendent, not by four or five equally well-qualified staff members, perhaps by some members of the teaching staff also, and even by some laymen from the community. It assumes also that the school board will not review critically the recommendations made for merit pay, that it will not be answerable in the long run to the community for decisions made, and that the community will tolerate unfair practices and favoritism in awarding merit pay. This is as absurd as the argument that one does not know a superior teacher when he sees one. Teachers recognize and reward with grades work of different quality by their pupils every day because they are trained and skilled in their profession. To say that supervisors cannot recognize and school boards should not reward work of varying quality among teachers is a direct contradiction of what teachers themselves do with their pupils.

Professional teacher organizations need to face up to the situation instead of burying their heads in the sand. The public is making a strong demand that superior teachers be paid more for purely selfish reasons. In most communities, people do not want to lose their most able teachers to other school systems where they will receive higher pay. On the national level people do not want their best teachers to leave the classroom for higher salaries in business and industry. The public is opposed to paying average or mediocre teachers as much as it is willing to pay superior teachers. This may be due to

(Concluded on page 43)



The Merit Pay Study Committee of the Eugene, Ore., Teachers Association is shown considering plans used for rewarding superior teaching.

The recent campaign against "distractions" which prevent superintendents from concentrating on instructional activities ignores various major emphases in the work of administrators. In the face of this charge, the author defines the role of the superintendent, hoping that superintendents who have learned from reality what it takes to administer a school system for the ultimate improvement of teaching and learning should not feel guilty about doing what, in their best judgment, must be done.

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Guilt Feelings for the Superintendent

A recent A.A.S.A. yearbook¹ treats the superintendent as an instructional leader. Chapter II of that yearbook starts off with the caption, "Instruction Comes First," and the book suggests that innumerable distractions prevent superintendents from doing much about the instructional program. That superintendents fail to deal directly with instruction is a judgment often expressed by curriculum workers; superintendents themselves have frequently joined in the chorus.

The indictment that superintendents do not, cannot, or will not relate their efforts to the improvement of instruction has been expressed so frequently and accepted so uncritically, even by the administrators themselves, that one finds many superintendents attempting to perform their roles with a sense of resignation, apology, frustration, or guilt. It is not the purpose of this statement to defend inane practices engaged in by a few administrators. Nor would the writer deny for a moment the obligation superintendents have to see that teaching and learning are enhanced. It is the aim of this statement to try to clarify the purpose of educa-

tional administration and to suggest that working directly and extensively with the instructional program, as much of the current literature suggests, may actually prevent the superintendent from making his greatest contribution to teaching and learning. If this position be supportable, the title of Chapter II, of the yearbook noted above, might be changed to read "All Else for Instruction."

A Definition of Administration

Educational administration occurs in a school community and consists of facilitating the development of goals and policies basic to teaching and learning, stimulating the development of appropriate programs for teaching and learning, and procuring and managing personnel and material that implements teaching and learning.² Let us examine briefly the meaning of these words.

A school community may be thought of as a school district or as a school attendance area. For the purpose of this article let us accept the school district for which the superintendent has administrative responsibility as the school community.

In that school community, then, the superintendent, with the help of his staff, has an obligation to facilitate the development of goals and policies basic to teaching and learning. The goals might be thought of as broad community decisions dealing with such problems as: Shall there be a junior college? How adequately shall teachers be compensated? Or, shall academic offerings be strengthened? Policies are somewhat more restricted than goals and frequently represent decisions made by the board of education. For instance, questions having to do with the general nature of a junior college, the components of a salary program, or the requirements for high school graduation might well be dealt with by a board of education.

Administration has the obligation to facilitate the formulation of these goals and policies. This suggests that the community and the board should see the need for grappling with such problems. The probable consequences of alternative solutions should be visualized. The relevant facts bearing upon such alternatives need to be made available. Adroitly, the administrator should give help with each of these steps.

The building of appropriate programs for teaching and learning involves more specific decisions than those having to

¹American Association of School Administrators, *The Superintendent as Instructional Leader* (Washington, D. C.: National Education Association, 1957), 484 pp.

²This definition is used with a more complete development of this concept in Roald F. Campbell, John E. Corbally, Jr., and John A. Ramseyer, *An Introduction to Educational Administration* (New York: Allyn and Bacon), in press.

do with goals and policies, and is essentially an activity of the professional staff. The development of such programs becomes a continuous matter of planning and evaluating with instructional personnel. It is these activities on the part of a faculty which an administrator should stimulate. The yearbook referred to above³ does contain some useful suggestions for the superintendent who would perform this part of his work more effectively.

Another major effort of the superintendent has to do with procuring and managing personnel and material which implements teaching and learning. The personnel needed to operate most school systems are numerous and varied. In schools, as in other organizations, tasks must be differentiated, and people who fit the various tasks must be sought. Among both certificated and non-certificated people a wide range of abilities is needed. The superintendent, with the help of his staff, has a key role in matching men with jobs, and at the same time helping all of the actors see their roles in the whole show.

The superintendent and his staff must also plan for, obtain, and manage literally hundreds of physical properties which in some way foster teaching and learning. These items are often grouped under buildings, grounds, equipment, and supplies. Clearly, none of these things, whether acoustical treatment of the classroom or closed circuit television, has any reason for being unless there appears to be evidence that teaching and learning may, in the end, be improved by its use. These judgments require insight into the educative process, and a willingness to examine studies having to do with the use of material. Whatever material is used by the school should be co-ordinated with the program of the school and with the activities of the personnel. Such co-ordination is a major administrative task.

In brief, it has been suggested that the work of the superintendent of schools needs to include three major emphases: facilitating the development of goals and policies basic to teaching and learning, stimulating the development of appropriate programs for teaching and learning, and procuring and managing personnel and material which implements teaching and learning.

Some Implications

What does such a definition of administration do for the problem posed in the beginning? In the first place, this definition might help the superintendent himself develop a more complete picture as to what his job really is. For instance, he might recognize more clearly, or at least accept more readily, the reality that part of his job requires him

to work with community agencies and community leaders in the development of broad goals for the schools. It will soon become evident that school goals cannot be contemplated in isolation from the goals of other community agencies and, indeed, of the community as a whole. Space does not permit elaboration of this process but two additional points need to be suggested. First, the superintendent, in most communities, should see himself as *one* of several leaders, not *the* leader, concerned with total community development. Second, while the superintendent needs to see school goals in the larger context, he should keep clear his obligation to see that school goals themselves are clarified.

This view of administration, to give further examples, may help the superintendent recognize more clearly the critical nature of each personnel selection. It is entirely possible that ten hours spent in obtaining a better science teacher in the first place may do more to improve the teaching of science than one hundred hours of supervision given to a less able teacher employed under a program of careless selection. Or, dogged determination on the part of the superintendent to find the best possible person for each principalship, as vacancies occur, may do more to stimulate effective teaching and learning than any amount of attention the superintendent himself can give to detailed instructional problems.

In short, it is hoped that this view of administration will help the superintendent see his task in a more unified manner. Goal development in the community, policy formulation with the board, personnel selection and business management, as well as curriculum development programs, can and should make a difference in teaching and learning. At any one or more of these spots a superintendent may need help and this leads into a consideration of the kind of administrative organization required to achieve the total administrative task. But whether the superintendent carries the load alone, as he does in many less populous districts, or with a corps of assistants, he has the obligation of *co-ordinating* all efforts toward the improvement of teaching and learning. He, and only he, can perform this most necessary function.

The School Staff's View

This concept of administration may also help a school staff understand a little more about what a superintendent can and should do. Many studies⁴ have shown that the perceptions teachers have of the administrative role are quite

at odds with how administrators see their own roles and perhaps even with the realities of the situation as an objective observer would see them. Many times teachers are quite unsympathetic to the need every school system has to establish two-way communication with citizens. Ultimately, citizen understanding and support affect many school practices whether they deal with curriculum, personnel, or finance.

This lack of comprehension was recently reflected in the question of a school principal, in a large city school system who asked, "Do school board policies actually make any difference in school practices?" There may be places where board policies are ineffective and there may be school districts where the distance between the school board and the staff of a single school is so great that connecting relationships dim out, but for the most part this question appears to be another expression of a misperception of the total administrative situation.

Teachers should receive help from their administrative leaders on problems pertaining to instruction and pupil personnel. Either the superintendent or members of his staff, including the school principals, are obligated to perform such services. Even so, teachers should come to recognize that the superintendent is required to do many things, ultimately important to teaching and learning, the performance of which makes him invisible to teachers a good part of the time.

Conceivably, too, the concept of administration suggested here may help board of education members and citizens generally comprehend more clearly just what it is a superintendent of schools is supposed to do. Again, the studies⁵ confirm the differences of perception of the administrative role held by board members, citizens, and administrators themselves. To be sure, laymen cannot be expected to understand what the administrator is about as long as administrators are confused in their own minds and as long as teachers reinforce a number of misperceptions. Possibly, with additional clarity concerning the role of administrator on the part of the profession, laymen too will come to see his role more clearly.

This hoped for understanding is particularly important as a basis for reducing conflict between teachers and administrators, and between professional school workers and lay citizens. Only with the reduction of such conflict in many places does it seem likely that the purposes of education can be clarified and the practices of schools improved. ■

³A.A.S.A., *op. cit.*

⁴For discussion of such studies see Ronald F. Campbell and Russell I. Gregg (Editors), *Administrative Behavior in Education* (New York: Harper and Brothers, 1957), Chap. 7.

⁵*Ibid.*

Teachers from Industry

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Johns-Manville researcher Dr. F. L. Pundsack demonstrates X-ray diffraction theories to Somerville high students.

Physics and chemistry, two of the mainstays of the high school science curriculum, have taken on new life at Somerville, N. J., high school. Seven scientist-engineers from the nearby Johns-Manville Research Center lend a professional touch and actual examples of the industrial application of sciences as teachers in the physics and chemistry classes at Somerville High. Not only do embryo scientists from the school have day-long experiences working with the research staff in the J-M laboratories, but whole classes of physics students move to the Center to continue their studies on friction, heat, sound, etc.

These are the high lights of a program now entering its second year of mutual co-operation between the science department at Somerville high school and the Johns-Manville Research Center. This is the answer that one progressive community has found to a question that is foremost in the minds and in discussions of most educators and industrialists today: Where is the supply of scientists and engineers to come from in an age when more and more avenues for employment are opening up and making demands on an unequal supply of man power for these fields?

Although much writing appears along this vein of shortage, inadequacies, and the like, the fundamental problem was summed up simply in an editorial in the *New York Times*, August 4, 1957, entitled "Teaching Key to Science Study." Based on the results of a Columbia University Teachers College survey, it was found that "An almost absolute relationship between good teaching and rising science en-

rollments was reported." This means rising enrollments in college, for a student's interest in a specific subject is thought to be established most frequently before he ever enters college or technical school. The area of specialization may change but the general interest is already awakened.

To educational and industrial leaders who worked out the Somerville high school program, this need was realized some time ago without benefit of survey. The result was the successful experiment in science education.

Two objectives

A plan to utilize the resources of the Johns-Manville Research Center was introduced at a meeting called by representatives of industry in Somerville in June of 1956. Besides the Johns-Manville personnel, members of the board of education, school administrators, and science teachers were present. The group had two paramount thoughts in mind while discussing informally the feasibility of undertaking a program of co-operation in science education: How can the community interest more girls and boys in pursuing careers in science? and How can the resources of Johns-Manville be utilized in extending and enriching the local science curriculum on the high school level?

With both industry and school realizing their obligation to society to provide this future man power, the conferees saw that these two objectives of interesting the students and enriching the curriculum were mutually interdependent. It was a firm belief of the group that if more of the present-day realities of science (chemistry and physics) were brought to the attention of the students,

greater interest in science careers would naturally result among them.

While much of the discussion along this line has come up with extremely complex programs requiring state or federal participation and enormous expenditure of money, the Johns-Manville and Somerville school people were convinced that in some small way action at the grass roots level was possible.

The group set to work to develop a concrete program to accomplish these two objectives in Somerville. Completed, the plan called for seven phases of activity that would enrich the high school science program:

1. Utilization of people from the Johns-Manville Research Center to extend and elaborate certain phases of the physics and chemistry courses
 2. Provision for exceptionally well-qualified students to work in one of the Johns-Manville laboratories, with a research scientist, for a brief period
 3. Planning of purposeful trips by selected science students to the Center
 4. Industry's assistance to the high school in setting up and equipping some area for research work by faculty members or by a very small group of selected advanced science students
 5. Industry's participation in preparing for and conducting the Science Fair to be held annually at Somerville high school. This would be accomplished by subsidizing prizes, judging exhibits, etc.
 6. Assistance in providing summer jobs for science teachers, both to supplement their salaries and to help bring the industrial point of view back to the classroom in the fall
 7. Hiring of carefully selected high school students for summer jobs in a phase of scientific work in industry
- An ambitious program this was and one that would take some time to put



Accelerated ninth-grade science students hear Earl R. Williams, director of the J-M research center, describe science at work.

into effect completely. It was not expected that all points could be embarked on simultaneously. The Somerville high science department started it off by drawing up a program for the 1956-57 school year which met the full approval of the Johns-Manville people involved. Judging from the period that has passed since the program was approved in November of 1956 and put into operation, there is already much to point to as positive improvement!

In the Classroom

The area of greatest achievement was in utilization of J-M scientists and engineers in the classrooms at Somerville high school. Periodically the students were treated to a particular phase of their subject in which one of the J-M men was a specialist. Chemistry students learned about the X-ray diffraction and reflection techniques used by Johns-Manville to study the internal structure of matter (crystals, etc.) and how X-ray spectrum analysis is used to determine the atomic numbers of elements. In another session of a more general nature, they were schooled in the chemistry employed in the utilization of such raw materials as asbestos, cement, silica, magnesium compounds, and certain rocks in the manufacturing of building materials.

The physics side of science was brought out in lectures on the theory of friction as illustrated by the automobile brake lining, and the physics of sound as applied by J-M engineers in developing acoustical materials. The molecular theory of gases took on substance to the young people when demonstrated in its application to heat transfer in building materials and jet airplane engines. Slightly out of the realm of these two academic sciences, was a talk to the mechanical shop students in which the modern automobile transmission was thoroughly explained by a J-M automotive engineer.

All of these topical sessions were in areas where the "industrial teacher" was well qualified to speak. All were chosen

to relate to theories difficult and dry to handle by mere textbook teaching. They were handpicked also to bring out natural applications that would appeal to today's youngsters who are the products of an automotive, jet, and skyscraper age.

Selected with equal care were the technical men who handled these assignments. Some had formerly been instructors in graduate days or before they entered industry; others were well acquainted with interesting presentation of material through publication and demonstration of their own work. All were men with the personality and ability to put their subjects over at the high school level.

Their interest in the program led them to design, in many cases, special demonstration apparatus with which to paint vivid pictures for the students. On all occasions their efforts were rewarded, for the students were enthusiastic with comments and questions to the point that nearly always the class ran well over the allotted 40-minute period.

On Field Trips

Supplementing this classroom activity were field trips by the science classes to the Research Center. There, in specially planned tours, they were shown the laboratory and pilot plant research and development areas typical of modern industrial research concerns throughout the nation.

Particular areas of the company's specialization were selected to illustrate scientific applications according to the specific interest of the group, whether chemistry, physics, or accelerated science students. Since each group visited on a different day this hand tailoring of the Center tours was simplified.

The "Day in Industry," practiced by Johns-Manville and many other companies in the area in co-operation with the schools, was further amplified to fit into this program. Many promising science students spent entire days at the Center in the company of a research

man, actually following him through a typical day's activities in product research and development or fundamental studies primary to a definite type of research.

Careful planning was needed to make this program an integral part of the high school science curriculum. The continuity of the subject matter in physics and chemistry, and the relationship of topics presented to what had been studied previously in class were kept upmost in mind in putting the program in operation. Conferences between the science teachers and the research people, prior to taking over classes, whether at school or at the Research Center, were arranged at least two weeks in advance. Discussed in detail were all phases of the work the students had already covered and how the substitute teacher would tie in his area of specialty with real continuity to the work already covered.

Meeting of teacher and industrial mind was further enhanced in the program by supplying a list of specialists in chemistry and physics who were available to act as advisers to the Somerville teaching staff during the year. These advisers were ready at all times to help the teachers with suggestions on presenting difficult scientific theories by showing them how to relate the theory to some contemporary application. They gave the teachers the benefit of their constant practical work in the fields of physics or chemistry which enables the company to keep abreast of rapidly changing developments. This, and access to, and familiarity with the most up-to-date apparatus helped them to supplement greatly the teachers' materials and knowledge of their subjects.

The Science Fair, currently popular in high schools, received added support at Somerville high by having Johns-Manville men judge exhibits and even assist and advise the youngsters on the preparation of their exhibits. In one case, a girl science student worked out a demonstration, using the Center's X-ray equipment.

Evaluation in terms of long-range educational standards was somewhat difficult. Such an evaluation would certainly need to be based on a program of more than one year's duration. Reactions of the students, teachers, and participating research people were most encouraging and significant. Comments from the participating research people indicated that they felt their experiences as visiting teachers in the classroom had been more than challenging. Most of them agreed that working with the high school students was most satisfying and enjoyable and considered the time spent in preparation most worthwhile. All were looking forward to taking part in the program the following year. ■

Five ways the local school district can prevent the loss of human talent—

If society demands a secondary education for all children, the nation must at the same time be just as firmly committed to the idea that education up to the highest level should be available to all who have the ability to profit from such advanced education. The argument is simply that, just as the survival of democratic government and the democratic way of life is dependent upon universal education, survival in an atomic age is equally dependent upon the development of the individual to the fullest extent of his abilities. It may also be suggested that there is not necessarily an incompatibility in educating everyone and in developing individual talent; quality need not be sacrificed for quantity; quantity need not result in mediocrity.

Today's challenge to American education does not imply that we abandon universal education. The ideal of 12 years of formal schooling for everyone is worthy of sacrifice and the problems inherent in the goal can, with understanding and effort, be solved. Nor does the challenge we face suggest that the future scientist and engineer be the exclusive concern of our schools; rather, that we make of education a serious matter, that we strive for excellence and quality, and that we make it possible for every girl and boy with ability, in the fine arts, the social sciences, and the humanities as well as in the natural sciences, to have the opportunity to develop this ability through an education beyond the high school.

The extent to which we have failed to provide this opportunity is evident in the fact that in recent years "... nearly half of the upper 25 per cent of all high school graduates have not entered college."¹ The reasons why students with ability do not continue their formal education beyond the secondary school are quite varied, including, among others, a lack of information about careers in time to prepare for them, a lack of self-knowledge of individual capabilities, a lack of inspiration at home and in school, a lack of personal or family funds for tuition and support.²

¹The President's Committee on Education Beyond the High School. *Second Report to the President* (Washington, D. C.: U. S. Government Printing Office, 1957), p. 40.

²*Ibid.*, p. 43.

Academic Scholarship

A Challenge to Your Schools

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College Costs

The significance of insufficient funds is readily understandable in view of both the cost of a college education today and the amount and distribution of family income in the United States. It is estimated that the yearly cost of going to college is between \$1,500 and \$2,500, about half of the amount going for tuition, which may range from \$60 to \$420 a year in the state universities to \$1,000 in the well-known Eastern college, and the remainder accounting for board, room, travel, fees, and incidental expenses.³ When this factor is considered in the light of the latest figures (1954) available on family income, which show that the annual income for 20 per cent of the families was under \$2,000, for 30 per cent, under \$3,000, and for 61 per cent, under \$5,000,⁴ it is hardly surprising that going to college depends less on intelligence and ability than on family income and class position.

It would be difficult to deny that in too many instances the cost factor has kept a student with ability out of college and denied him the opportunity for advanced education. Inasmuch as there is no evidence that intelligence and ability are the exclusive property of any one class, it is evident that in such instances we have been guilty of a tremendous waste of human talent. Not only is such waste unfortunate; it could be fatal. Our present obligation was pointed out years ago by Thomas Jefferson when he wrote: "... those persons whom nature has endowed with genius and virtue should be rendered by liberal education worthy to receive and able to guard the sacred deposit of the rights and liberties of their fellow-citizens, and ... they should be called to that charge without regard to wealth, birth, or other accidental condition or circumstance."⁵

Most recently the Educational Policies Commission has written upon the same point: "American leaders in public life or in private occupations come not from one class or one economic level; they rise from every section of the people and possess widely varied talents."⁶

This essentially is the challenge facing American education: To prevent the waste of human talent by providing every able individual with the opportunity and the means for the fullest development of his abilities.

³National Citizens Council for Better Schools. *Better Schools* (Spotlight Report), Vol. 3, No. 4, Apr., 1957, p. 5.

⁴Joint Committee on the Economic Report. *Characteristics of the Low-Income Population and Related Federal Programs* (Washington, D. C.: U. S. Government Printing Office, 1953), Table I.

⁵Knight, Edgar W., *Readings in Educational Administration* (New York: Henry Holt and Co., 1953), p. 9. (Quotation from Thomas Jefferson's "Bill for the More General Diffusion of Knowledge," 1779.)

⁶Educational Policies Commission, *The Contemporary Challenge to American Education* (Washington, D. C.: The National Education Association, 1958), p. 9.

Developments of Scholarship

To suggest that the present academic scholarship program provides the answer to the problem of financing higher education for the student with ability but without means would be naïve. Obviously the problem is too complicated to warrant such a simple answer. However, there are certain developments regarding the academic scholarship in this country which enhance its importance in this regard:

1. *The number of scholarships is increasing.* The estimated 150,000 scholarships now available represent a substantial numerical increase during recent years, and a study of the major sources of scholarships suggests that further grants will be forthcoming. In addition to philanthropic contributions, organized alumni funds, current operating funds of individual institutions, and the contributions of churches, fraternal organizations, service clubs, professional societies, civic clubs, and similar groups as sources of scholarships, business and industry, labor unions, and foundations are developing more comprehensive scholarship programs and offering a greater number of individual grants. Moreover, of no small consequence, whether or not they are eventually enacted into law, are the proposal by the present administration for federal aid to provide 10,000 college and university scholarships; the current recommendation of the legislative commission of the National Education Association asking for the immediate establishment of 20,000 undergraduate scholarships with 80,000 to be offered after four years;⁷ and the recommendation by the President's Committee on Education Beyond the High School that "... private, local, and State sources increase their support of scholarship funds to several times the present amount and number of scholarships."⁸

2. *Scholarships with a broad national interest are becoming more common.* At present, restricted grants are more typical than unrestricted ones and it is not unusual to find eligibility for a scholarship dependent upon a certain geographic area or a particular economic or social class, upon the parent's occupational affiliation with the grantor, upon the applicant's choice of institution or area of study. Such restrictions quite frequently reflect current needs, for instance the present demand for scientists, engineers, and mathematicians. However, there is evident the broader and more important consideration for the development and utilization of individual ability, regardless of the area it represents, best exemplified per-

haps by the scholarship program supported by General Motors and that of the National Merit Scholarship Corporation.

3. *The amount of the individual scholarship is becoming more realistic in terms of the financial assistance it affords.* As society becomes increasingly conscious of the frequent discrepancy between ability and the financial means to develop that ability, between the cost of attaining an education beyond the high school and the extremely high percentage of families with a comparatively low annual income, and increasingly aware of the price to the nation of wasting human talent, scholarships of \$1,000 to \$2,000 appear more numerous than in previous years. More and more frequently, the grant covers not only an increasing percentage of the student's tuition but also includes an allowance for board and room, books, fees, and incidental expenses. With a scholarship which represents a more meaningful dollar and cents value, the student is consequently encouraged to undertake advanced education and to complete it by borrowing or working the remainder of his way to an education estimated to be worth \$100,000 or more in extra earnings over a lifetime.

4. *The scholarship represents an increasing degree of selectivity in regard to intellectual aptitude and achievement.* In many instances the relationship between a scholarship and scholastic attainment or scholastic merit is negligible; however, an academic scholarship is properly conceived as financial assistance to a student with intellectual ability but without financial means of continuing his education after graduation from a secondary school. Enrolling some 3¼ million students in 1956-57, an increase of 40 per cent over the enrollment in 1951-52, the colleges and universities face the demand of approximately 6 million youth for admission in 1970. Unless, within the intervening 12 years, the resources of these institutions can steadily be developed, their enrollments will be sharply restricted in terms of the demand for a college education. Admission necessarily will become more selective; and, consequently, a scholarship will represent an extremely high degree of selectivity in regard to intellectual aptitude and ability.⁹

Three Bases

That the academic scholarship constitutes a major challenge to the local school system thus may be predicated

upon three bases:

1. The national welfare and survival in the present day is dependent upon the opportunity every individual with intellectual ability has for the development of his ability to the fullest extent through education up to the highest level.

2. In the case of the individual with ability but without sufficient financial support for this advanced education, the academic scholarship presents itself as a legitimate means to a necessary and important end.

3. To the individual student and thereby to the individual school system, the academic scholarship becomes increasingly significant because of four current developments: (a) The number of scholarships is increasing; (b) Those with a broad national interest are becoming more common; (c) The amount of the individual scholarship is becoming more realistic in terms of the financial assistance it affords; (d) The academic scholarship represents an increasing degree of selectivity in regard to intellectual aptitude and achievement.

In order to state the challenge as concisely as possible, five questions may be posed for consideration in terms of the individual school system and may be addressed to all who would prevent as far as possible the waste of human talent:

First, Do your students have the opportunity and the means for becoming acquainted with the field of occupations in general and with particular occupations as related to the individual's abilities, aptitudes, and interests?

Second, Do you identify the varying levels of ability among your students and does the educational program of your school serve the entire range of these abilities?

Third, Do you, as parents and as educators, develop, through your attitude toward education, through your willingness to support your schools, through your co-operation with one another, a scholarly tone to the school and thus encourage and motivate the student to seek advanced education?

Fourth, Do you provide the student who has ability — and his or her parents — with the necessary information regarding the programs of various colleges, their admission and graduation requirements, the cost of attending these institutions, and the opportunities they afford for financial assistance so that the student, his parents, and the personnel of the school can plan wisely, co-operatively, and early for his education beyond the high school?

Fifth, Do you make available to your students a pool of information concerning the availability of scholarships, the opportunity they represent, and the means for attaining such assistance? ■

⁷American Association of School Administrators, *The School Administrator*, Vol. 13, No. 3, Jan., 1958, p. 12.

⁸The President's Committee on Education Beyond the High School, *op. cit.*, p. 56.

⁹Indicative of present-day selectivity is the study by John L. Holland and John M. Stalnaker, "An Honorary Scholastic Award," *Journal of Higher Education*, Oct., 1957. ("The chances for becoming a Merit [National Merit Scholarship] winner are then about 1 in 276. This is roughly equivalent to being in the top .3 of one per cent of the high school population of the nation, in scholastic ability and promise for college work," p. 361.)

Improving Science and Mathematics Instruction

In the Smaller High School . . .

The second installment of this two-part article on ways and means to improve science and mathematics instruction considers the suggestions of special value to the smaller high school with limited staff and facilities. The first part of the article, written by a jury of three educators and a college physics professor, which contained suggestions for the larger high school, appeared on pages 14 to 16 of your JOURNAL for July.

LLOYD B. URDAL, HENRY M. REITAN, ALFRED B. BUTLER,
and GORDON E. McCLOSKEY

II

Recent concern for improvement of mathematics and science instruction has again focused attention on the difficulties of providing fully rounded courses of study in small high schools. Fortunately, with respect to mathematics courses, small high school offerings are not as sparse as national statistical averages indicate. Those averages are pulled down by the limited offerings of some southern and midwestern states. In many areas, small high schools already provide science and mathematics programs which compare favorably with those offered in the larger high schools. For example, in the state of Washington, where most of the high schools are small, statistics for the school year 1956-57 reveal that 288 of the 294 high schools offer algebra. The remaining six offer the course in alternate years. Only one school in the state does not offer chemistry either every year or in alternate years. Only 18 schools do not offer physics and 14 of

those are private schools. Higher percentages of pupils in schools with enrollments of less than 100 were taking courses in physics, chemistry, biology, and plane geometry than in high schools with enrollments of over 500.

Limits to Improvement

Although science and mathematics programs in some small high schools compare favorably with those of larger schools in many cases, improvement is possible and desirable. It is obvious, however, that there are limits to which course offerings can be increased without greatly decreasing class size or restricting offerings in other subjects. Schools planning to improve the quality of science and mathematics education should weigh carefully the following points:

1. Increased emphasis in science and mathematics should not be made at the expense of other equally important areas. Dr. Milton Eisenhower, in speaking of non-science subjects, states:

The same shortcomings that are now forcibly dramatized by world events are obviously present in all fields of learning. . . . We need specialized scholars in all the disciplines—from science to the humanities, from engineering to medicine. In a democracy, we want educated people to have true breadth of knowledge and understanding so that their judgments on all matters of citizen concern will be valid.

2. Schools should offer only the courses which can be adequately taught. It would be of little value to offer courses if adequately trained teachers, equipment, or facilities are not available.

Benjamin C. Willis, General Superintendent of Chicago Schools, recently stated:

Within the school, our best and most influential resource is, and will continue to be, the teacher. Books are vital only as the teacher has vitality; equipment is useful only as the teacher has the ingenuity to use it; and buildings are warm and inviting only as the staff is outgoing and friendly. Without the curiosity and ingenuity of people, that small lump of uranium would still be lying locked away in the earth. The great challenge

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to all of us for the future is to find the ways to inspire and encourage our young people to fulfill their highest potential. Their future and ours depends upon the twin forces of mind and spirit.

3. An improved program in mathematics and science needs community planning and acceptance. Any changes that come about in a school program require widespread public understanding and support. Improvements in any aspect of schooling are unlikely to be permanent unless citizens understand the reasons for them and the importance of a well-balanced program.

James R. Killian, president of the Massachusetts Institute of Technology, and special White House adviser on missiles, states:

If American Science is to continue to prosper; if it is to continue to attract its proper complement of creative and gifted minds, scientists must combat the notions that science and engineering are incompatible with the disciplines of the great humanities, that they are narrowly materialistic and destructive of human values. . . .

Clearly, the makers of public policy and the citizens they represent need as never before, to increase their understanding of science. If we are to maintain a favorable environment for scientific advancement, and if the nation is to deal wisely with the great technological forces of our time, it is vital that the scientist speak out of his specialized knowledge on the meaning of science to our society.

All of the suggestions made in the article by these authors in the July issue of your SCHOOL BOARD JOURNAL (pp. 14-17) should be helpful to schools of any size. However, it is widely recognized that small schools are confronted with some additional problems which best can be met by means adapted to their program limitations and to the administrative structures in which they operate. Here are some ways small schools can improve instructional materials, physical facilities, teaching, and increase pupil's interest in mathematics and science.

Instructional Materials

Improve library facilities and materials. Many books and publications can be made available to more students in small school libraries. Some organizations such as the American Association for the Advancement of Science circulate books through school libraries free of charge. The cost of a good science and mathematics library is easily within the range of almost any district. These books can be placed in classrooms or a central library. In addition, many citizens have valuable books and publications which they will gladly donate to schools if teachers demonstrate a desire to obtain them. In spite of course limitations, any school can provide adequate science books.

Use of special equipment. Many schools are finding it advantageous to

use small scale equipment for chemistry courses known to the trade as "semi-micro" equipment. The original cost is less and the amount of chemicals required to perform experiments is a fraction of that previously required. A complete description of this equipment is listed in current supply catalogues.

Construction of equipment in school. Many pieces of equipment for physical science, general science, and other areas can be constructed in school shops. Ant colony houses, sundials, prewired electric circuit boards, lever and pulley arrangements are examples of some of the equipment that can be made. Professional mathematics and science magazines include design and description of additional material. Some students in farm shop, industrial arts, and other classes receive valuable training from making such equipment and become more interested in the scientific principles embodied in the equipment and its use.

Use surplus equipment. Surplus materials from some government agencies are available to schools at reduced cost. Some colleges sell old equipment when it is replaced by new. Much of this equipment would be useful in the small high schools. Maintaining contact with these sources would cost little and make equipment available at a considerable saving. Some colleges and industrial firms loan expensive equipment to schools for specific projects or demonstrations.

Correspondence courses can help. Where it is impossible to offer certain high school courses in mathematics and science, correspondence work offered by colleges or commercial schools is a partial answer. Such courses are not equivalent, however, to those directed by a good teacher in a well-equipped classroom.

Increase use of audio-visual aids. Tape recordings of lectures and assignments have demonstrated their capacity to enrich instruction. Excellent films are available at small rentals from film libraries or state departments. Some schools have reported favorably on the use of complete courses in physics on film. They are especially useful to teachers who are not thoroughly trained in a particular subject. Hundreds of films in all science and mathematics subjects are available.

Improving Physical Facilities

Consider the possibility of the multi-purpose room. Many schools planning new classrooms are designing rooms which will serve for instruction in several science subjects. Others, faced with problems of remodeling, are utilizing the multi-purpose idea. State education departments, colleges, manufacturers of science equipment, and teachers

are often available to assist in planning rooms which provide for adequate work and storage space.

Utilize existing facilities more effectively. In some schools, rooms are already equipped for instruction in industrial arts, farm shop, or similar courses. In cases where these classrooms are not scheduled for the full day, minor remodeling or additional equipment may provide needed facilities for some science classes.

Share services for science instruction. A recent report shows that a number of schools in New York transported students daily to a central building for instruction in agriculture and industrial arts. Similar centers could be set up for science. Classes might be scheduled for longer periods, thereby reducing the number of days on which students would need to be transported to such centers. Two studies in progress in the Rocky Mountain Region and New York State will provide much additional information on shared services when completed.

Share science equipment. Many pieces of equipment such as geiger counters, microtomes, centrifuges are considered too expensive and too infrequently used to warrant purchase by individual schools. In some cases, such items may be shared by a number of schools within the area. If courses are scheduled on alternate semesters all the equipment that is used only in that course could be moved to another school. Mobile science vans, equipped with high quality demonstration equipment could be developed. Mobile libraries have demonstrated their usefulness.

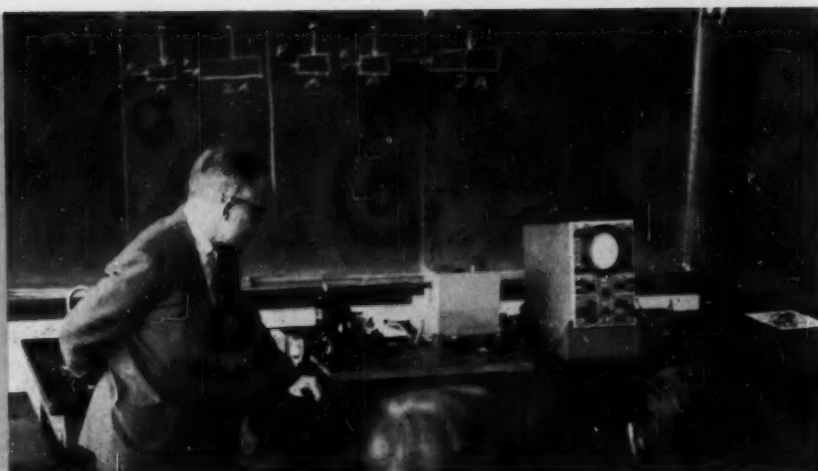
Consider the possibilities of summer school instruction. In schools where neither sufficient classroom space nor trained teachers are available during the regular school session, it may be possible to offer science courses during the summer months when teachers from other schools are available.

Improving Teaching and Personnel

Give teachers more time for science and mathematics teaching. It is well known that in small high schools most teachers must teach more than one subject. Often, the teacher is so overloaded with other teaching responsibilities that he has insufficient time to prepare for good teaching. Some schools are employing student science assistants who perform many of the routine tasks. This frees more of the teacher's time for instruction.

Consider the employment of a teacher with an integrated science preparation. A growing number of teachers' colleges and liberal arts colleges are training teachers in broad areas of science rather than one or two specialized fields. This

Improving the science and mathematics program in smaller high schools should not involve: (1) increasing emphasis at the expense of other important areas; (2) offering courses which cannot be taught adequately; and (3) enriching the subjects without community planning and support.



— Courtesy Somerville, N. J., Schools

type of training enables one person to teach two or three science subjects. People with such preparation are hard to find, but some are available.

Make use of a county consultant. Some counties already employ science instruction supervisors or consultants. Consultants provide some or all of the following services: Aid individual teachers in developing better instructional methods, perform classroom demonstrations, serve as a resource person on visual aids and teaching materials, organize an evaluation program, coordinate curriculum developments, organize science and mathematics workshops, and provide in-service training. Unfortunately, in many counties where consultants are employed they have insufficient time to work with all schools. In some counties, school boards and administrators of adjoining districts have met to examine the need for additional personnel and teaching materials and to plan better consultant travel arrangements and schedules of visitations.

Consider the possibility of a traveling science teacher. Schools in many districts and counties share a special music teacher. This idea if applied to science instructors would allow two or three schools to co-operatively employ a well-trained teacher to provide better quality instruction in a number of schools. Science and mathematics courses could be scheduled to give such teachers adequate time for travel between schools. Travel expenses should be paid; except in districts where schools are widely scattered, however, they would be minor.

Developing Interest in Math and Science

Clearly, many small schools cannot easily provide as many science courses as large ones. However, studies indicate that pupils can obtain much knowledge of science by means of nonclass activities which are within the resources of small schools. To a large degree, limited course offering can be supplemented by science activities which involve both citizens and pupils. Any school can institute one or more of the following projects to increase both citizens and pupils science interest.

Science fairs can stimulate students to study large amounts of science in the process of preparing exhibits. These are excellent cocurricular activities and provide considerable amounts of high quality homework. These may include inventions or projects and demonstrations on any phase of science developed in or out of the classroom. Some states have science fairs where the projects of local winners enter competition.

Institute or expand science field trips. Direct observation of science in action results in learning and also is an excellent means of arousing pupil's interest. When field trips are well planned, well explained ahead of time, and allow each pupil time to take part, they are excellent learning and motivational instruments. Rural communities afford many excellent opportunities for science trips with their nearby farms, dairies, and other agricultural processing plants.

Schedule assembly programs which deal with interesting and important aspects of science. There are a number of excellent science lecturers who tour

the country, some under the auspices of commercial firms, others tour independently. University science departments and lecture bureaus can provide speakers and demonstrations. Numerous science movies suitable for assemblies, science club meetings, or the regular classroom are available gratis or at a small fee.

Encourage elementary teachers to place appropriate emphasis on science. Surveys indicate that many scientists had their first real scientific interest aroused at an early age. Affirmative interpretations of science will help youngsters develop interests which can be more fully developed if all teachers help pupils see the relationships of science to their daily lives and careers. School administrators can encourage teachers of reading to select books on science and mathematics suitable for supplementary reading and suggest that social studies teachers relate science and mathematics to cultural progress. Art teachers might use illustrations of technological advances.

Most school boards have always been interested in ways of improving school programs. They have been willing to weigh the many pressures brought to bear on the schools. Their co-operation with school administrators, as well as the citizens of a community, has helped build a better school program. They have always known that any improvement requires careful study and usually entails increased expenditure. All of those interests are now more important than ever to American youth and to the security and progress of our country. ■



Above: The school's homemaker teacher shows off one of the school's new ovens to "tourists" during the open house held following dedication services. Left: Principal speaker, Col. Dean Hess, chats with parents as the student body president looks on.

SCHOOL DEDICATION | Why Not Make a Production Out of It?

ROBERT L. BRIGHAM

Director, Community Relations and Public Information,
South Bay Union High School District, Redondo Beach, Calif.

Dedicated any new schools lately? Having recently (Nov., 1957) had such a ceremony for our new Aviation High School, we qualify as experts.

Experts? Well, hardly. But we look back on the Aviation ceremony with great satisfaction, for we feel that it gained many friends for our schools. The effort involved was worth it. In fact we think that a great opportunity would have been wasted had we settled for anything less. It was a production, and we are glad.

What is needed for a good dedication?

The Principal Speaker

You are proud of this school. Let's start out by getting someone important to deliver the principal dedicatory address. Someone who can be related to the school in some way. Do you have an alumnus of one of your older schools who has become well known? If you have, by all means invite him home for this important occasion. His mere presence will remind your constituency that a part of his contribution to society has been the school's contribution. His success is no accident. Many people contributed to it; some of them were his teachers. If such a person is not available, try to secure an outside personality. Preferably one who is nevertheless related to the school.

In our case, with a name like Avia-

tion we could hardly miss. We asked Col. Dean Hess to be our speaker. The choice proved to be a most fortunate one. The colonel is the "Flying Parson" of World War II and Korea fame whose life was dramatically portrayed in the motion picture "Battle Hymn." Hess did his first flying as an air-borne circuit rider in northern Ohio and is now chief of the office of informational services for the Air Force in Los Angeles. His address would have been an inspiration to all who heard it even if he had not been an important personage.

Obtaining Publicity

Your problem is not solved when you have secured a "name" speaker. No editor should be left unturned in your effort to let people know who is speaking, and more important, *why* he is speaking. The "bigger" your speaker the easier it is to call attention to the event. Newspapers, periodicals, radio, and TV are anxious to spread the word if it is news.

Locally, you must not only let the people know about your program, you must make them want to be there. Send formal invitations in large numbers. Send them to leading citizens of the community, all employees of the district, fellow educators from other schools, and, of course, parents.

Incidentally, you will be compliment-

ing them and your school if the really top people of the community are on the platform. Besides the mayor and leading school people from neighboring districts, we included leaders of the aviation industry because of the special emphasis we have placed on this theme.

So far there has been no mention made of the most important element in any school. The students. They should be brought in on the planning and the execution of the program.

Don't Forget the Students!

We played a long shot and included the school band in the program. Because of the basic enrollment plan, Aviation high has only freshmen and sophomores. The youngsters in the band had worked together practically not at all when the decision was first made. On the day of the dedication they had been rehearsing about six weeks. Yet their contribution to the program was magnificent!

A student led the audience of 800 plus in the flag salute. A classmate accepted the school in the name of the student body from the president of the board of trustees. His speech compared favorably to the major address of the day. Representatives from the local clergy were invited for the invocation and the benediction.

When the program was over, we felt that we had done justice to a noteworthy occasion. The next time we try to vote bonds we may realize that we did more than that. In honoring one school we may well have paved the way for more improvements and additions in the future.

How to Save Money on Sites and Site Development

HAROLD W. BOLES

Educational Consultant, Newark, Ohio

4.

"Site" here refers to the entire tract of land on some small part of which is constructed a school building. "Site development" refers to any work done on a tract of land (aside from actual building construction) to make it more usable for the education of boys and girls and aesthetically satisfying by proper landscaping. Opportunities for saving money on these items rest almost entirely with the board of education and the superintendent of schools. However, you should not exclude your architect from site considerations. Many an architect has been compelled to design a school on an austerity budget because precious funds were squandered on an injudiciously chosen site before he was ever consulted.

The following suggestions toward saving money on sites and site development are presented in order of their importance to builders of 86 "low-cost" schools in 34 states.

1. *Select and purchase the site well in advance of actual need.* Real estate values somehow have a tendency to jump sharply if word gets around that a certain tract is to be purchased with public funds. If a board waits to buy a tract until it is surrounded by new housing developments, the landowner—even if he has no intention of "gouging"—will undoubtedly be paid more than if the ground had been purchased while it was still open countryside. Independent appraisers will set a higher value on it. Sometimes, in densely populated cities with established popula-

tions, such situations cannot be avoided when it becomes necessary to build new or to replace old schools. Too often, though, no one has the foresight to acquire school sites in new housing developments until after lots are all plotted and sold. Even condemnation cannot avoid wasteful and disproportionate site costs under such circumstances.

2. *Purchase a site which has ready access from existing streets or roads.* A driveway or two can be expensive, but if streets or roads have to be extended long distances just to get to the site, the costs skyrocket. If the board of education must also provide sidewalks (and it isn't safe for children to walk in the streets!), curbs and gutters, the building construction budget is bound to suffer.

Sources of School Building Economy

In educational building "true" economy is generally understood as that economy which lowers costs without diminishing educational values of the building. In Dr. Boles's comprehensive inventory of basic ways to squeeze every last dollar's worth from limited school construction funds, the suggestions were scrutinized for *true* economy by a corps of school plant authorities, then rated for *proved worth* by 86 builders of "low-cost" schools in 34 states.

This fourth installment in the eight-part series tackles economy in the area of sites and site development.

Other articles in the series are:

1. What the Administration Can Do to Reduce School Building Costs (May, 1958, SCHOOL BOARD JOURNAL, pp. 52-54)
2. Proper Educational Planning Can Help Reduce School Plant Costs (June, pp. 39-40)
3. The Right Architect Can Save You Money (July, pp. 26-28)
5. Equipment Is Important to Economy
6. Some Construction Methods Cost Less Than Others
7. Materials Used Can Vary Costs
8. Insist on Economical Engineering, Too

(When the series is concluded, reprints will be made available to you at minimum costs.)

3. *Be sure utilities are readily available to the prospective site.* Extending utilities may be as expensive as extending streets—or even more so. If you are considering two or more alternative sites, availability of utilities to one can outweigh an awful lot of disadvantages to the other. Don't brush off the possible costs of extending water, sewer, gas, or other utility lines as negligible. They usually are not. Get estimates, either from the utilities or from independent contractors. Most any community has resident citizens who are authorities in such matters, and many will make free estimates, particularly for the schools.

4. *Make certain the site requires little or no special drainage.* Many a flat site looks wonderful—until the first spring downpour. No one will like that sparkling new building if the children have to get in and out by boat. An underlying network of sewers and catch basins costs plenty, but educates little. An available storm sewer is fine—if it will carry all the water which is “shed” by a huge roof in addition to what it now carries.

5. *Locate the site as centrally as possible for the pupils the school is to serve.* Saving a few dollars on the cost of the land will be insignificant if many children have to be transported for long distances—or if the school is so far from its pupil population that it does not serve as long as it might have had it been more suitably situated.

Minimum Grading

6. *Choose a site that will require only minimum grading and landscaping.* It takes more than faith to move mountains. It is true that the modern earth movers can do it, but they don't do it for nothing. Land bordering the city dump may be so cheap it is practically a steal, but a screen of plantings to shut out the unappealing sight won't be. If a site can be found which already has some trees and shrubs many of them may be saved, and this could save thousands of dollars on future landscaping. A hillside may make possible a natural stadium or amphitheater at a fraction of what it would cost to construct such facilities. Thus, the administration needs to be looking for a site that will accommodate not only the building for the educational facilities proposed, but also such other site improvements as may be needed.

7. *Don't buy a site that will require any special type of construction.* A steep hillside may provide the desired acreage, at minimum cost, but stilts to hold one side of the building may cost a fortune. Swampy ground and cheap earth fill may look like a bargain, but before you jump at such a purchase, you should investigate the kind of footings the school building would need. The “floating” type or walls that have to go twenty feet down are not the most economical kinds.

8. *Select clear, undeveloped land.* This is almost purely a matter of mathematics. In any given community, values might be something like this:

20A @ \$1,500 per acre	= \$	30,000
20A = 80 lots @ \$1,500 ea.	= \$	120,000
20A = 80 lots with houses @ \$15,000 ea.	= \$	1,200,000
20A = A shopping center	= \$	12,000,000

9. *Try to get a reasonable price fixed through agreement with the owner.* This may save hard feelings, but it may also save court costs.

10. *Buy a rectangular site.* Such a site is generally less costly to fence and ditch, and easier to utilize. In irregular sites, there are often odd-shaped areas of which no use can be made, so taxpayers pay, in effect, for land which they might as well not own.

Use the Architect

11. *Have the architect and/or engineers participate in the site selection.* Many a pile of masonry considered an architectural monstrosity or a blight on the city landscape has been occasioned by having a board first purchase a site and then employ the architect and direct him to “put a building on it.” An architect or an engineer will often help to avoid many of the pitfalls suggested in this article. Such a man will know if the site will require special drainage, excessive grading, expensive landscaping, or a costly type of construction. He will know or find out about streets, utilities, and soil conditions. Furthermore, usually an architect will charge no more if he does help in site selection—and he prefers to help. After all, he has to design your building to fit a particular site and the earlier he enters the proceedings the easier it will be for him to design and the earlier you will have your new building.

12. *Consider two or more alternate sites.* The wisdom of this recommendation should be apparent. A landowner is more likely to set a reasonable value on his property if he knows it is not the only one being considered. Accessibility may be better to one than to another, or utilities may be closer. The soil consistency of one may be better than the other. It is almost certain that you will get a better school by being able to make a choice between sites than you will if you have to take one certain tract of land.

13. *Quietly obtain an option to buy.* Even the most scrupulously honest neighbor is likely to ask you, as an official representative of the board of education, a higher price for land than he would ask you as an individual. Besides, if word gets around that the new school is to be in this area, values of surrounding properties are likely to go up so that you will pay more even if the board pre-empts the

land by right of eminent domain. This should make obvious the desirability of having someone not identified with the board of education carry on the negotiations for an option to purchase.

14. *Test-bore any possible site before buying it.* Only this procedure can determine the composition of the subsoil and indicate whether normal footings can support the load which would be imposed by the planned structure. It might indicate that the building should be single story rather than multi-story, or that one part of the site is suitable for building while another is not. A relatively small expenditure for test borings might prevent purchase of a site which would be wholly unsuitable.

15. *Get three or more separate and independent cost appraisals of the site before buying it.* Experience indicates that, if this is done, the purchase price will approximate the average of the three appraisals. Such an average may be used as a basis for negotiation to try to obviate condemnation proceedings.

16. *Have students do the site development and landscaping as educational projects.* This would undoubtedly save considerable sums of money, though there are those who might question the educational values and the political implications of such practice. However, in many communities, it would probably be perfectly acceptable. Few could question that the engineering of sewer lines, the surveying of play courts, the laying out of planting areas, or the proper setting of flowers or shrubbery offer very real educational opportunities—and just as real monetary savings.

Co-operate With Housing Developers

17. *Get developers of new housing projects to set aside ground for school sites.* This practice does not seem to be widespread, but it certainly merits consideration—particularly in areas where there are huge new subdivisions which require one or more new schools to educate the additional children who will move into the district. The principal objection seems to be that such an action requires the developer to increase the cost of his houses, so that the new homeowners pay the cost of the new school or schools. Perhaps this is not completely unfair or unrealistic when we consider that in many instances the houses are on the tax duplicate for an amount which does not begin to pay even the school operating costs for the children who live in them.

18. *Pay only a reasonable price, even if you have to condemn land.* This is apparently a last resort, as it probably should be. However, members of boards of education must remember that they have an obligation not only to the “neighbor” who owns the land desired for a school site, but to the many “neighbors” who are going to pay for the land with their tax dollars. ■

**A review of the planning
behind a consolidated
rural district's solution
to its school plant
problems —**

The Elk Lake Joint School District in Susquehanna County, Pa., is composed of seven school districts joined together to provide better educational opportunities for the children of their communities.

When this joint school district was formed they operated: one one-room rural school housing grades 1-6 and enrolling 21 pupils, one five-room building housing grades 1-7 and enrolling 180 pupils, one seven-room building housing grades 1-6 and enrolling 250 pupils, two buildings each housing grades 1-12 and enrolling 185 students in one and 167 in the other, and one junior-senior high school housing 180 students.

Some of these buildings were better than others, but none was satisfactory. The first problem, and in many respects the most serious one, was where to build and what to build.

Plans Studied

The following plans were carefully studied:

1. Build a junior-senior high school at some central point and remodel four of

the old buildings and use them as elementary schools.

2. Build a junior-senior high school at a central point and build two new elementary schools, one to serve the eastern half of the district and one in the western.

3. Build one "central unit" for grades 1-12.

A map of the area was completed and the student population designated by use of map tacks. The pupil population center was then determined. None of the districts had more than 50 pupils within walking distance of the existing schools. Ninety-five per cent of the pupils had to be transported regardless of which of the aforementioned plans were adopted.

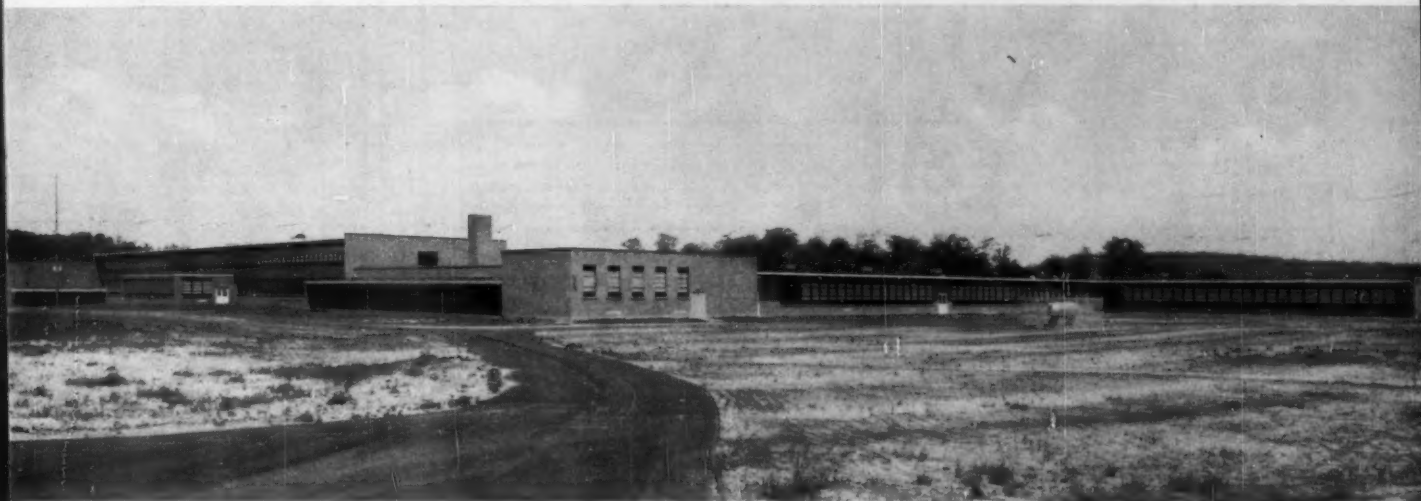
If plan number one was adopted, two of the buildings needed a major remodeling program and two needed to be replaced. Either all bus routes had to be covered twice each day (one bus for the elementary pupils and one for high school) or else the elementary children would have to arrive at school one-half to three-fourths of an hour early each morning and wait one-half to three-fourths of an

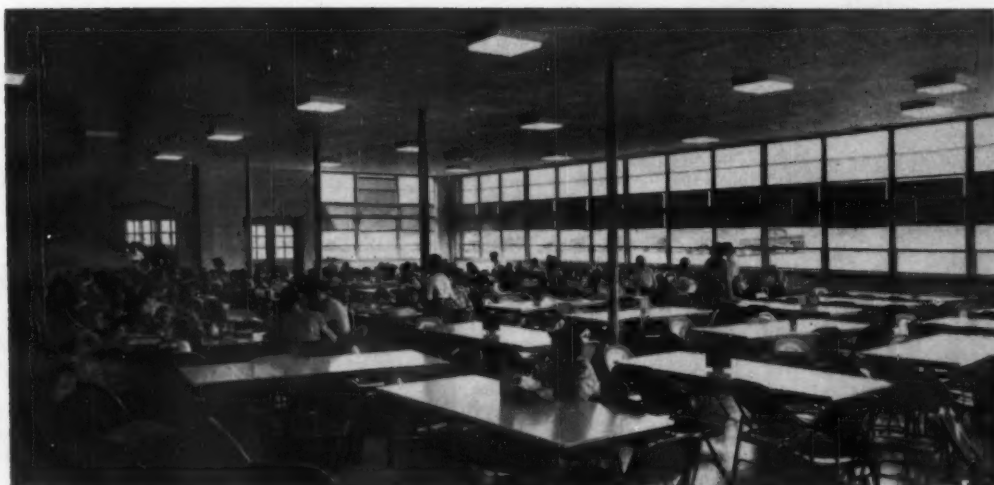
Elk Lake's Combination School

CECIL LATHROP

Supervising Principal, Elk Lake, Pa., Joint School District

A front exterior view of the Elk Lake School, Susquehanna Co., Pa., with the main entrance shown at the left. Architect is Emerson C. Willson, Clarks Green, Pa.





The Elk Lake cafeteria, which has a seating capacity of 300 serves both the elementary and secondary students of the school in separate noon sessions.

hour each night. The problem is not how far a child travels to school, but the time that elapses between the time he enters the bus and the time school opens. It did keep the children closer to their homes.

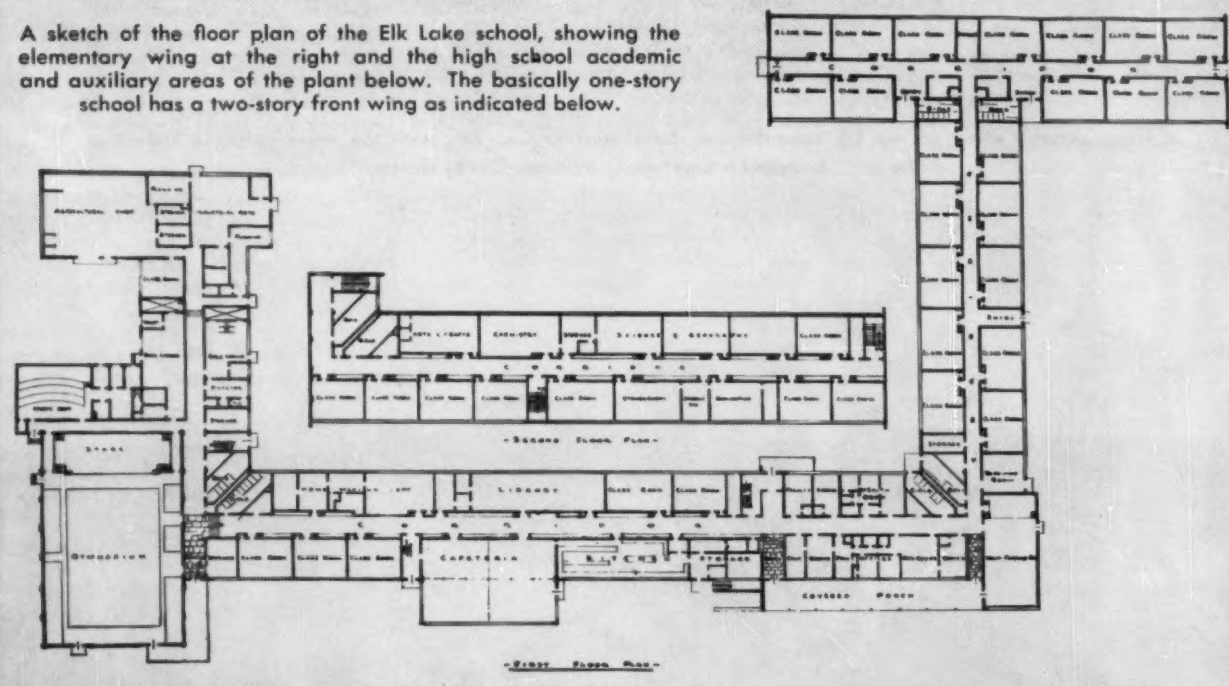
Plan number two would provide an excellent school plant. It has the same transportation problems as plan number one.

However, after considerable discussion, plan number three was finally adopted: The transportation was simplified because the buses needed to cover each route only once each day. Once the buses are loaded they will take the most direct route home (we have 21 buses). The children on the long routes get home at

least one-half hour earlier than they would have under either plan one or two.

Concerning facilities provided by the three plans, one office suite, one health room, one library, one cafeteria, and one pair of teachers' lounges will serve all students in grades 1-12 in plan three, whereas plan one involved five of each of the

A sketch of the floor plan of the Elk Lake school, showing the elementary wing at the right and the high school academic and auxiliary areas of the plant below. The basically one-story school has a two-story front wing as indicated below.



above units and plan two would require three sets.

The special services could be supplied more efficiently in one building. These services include health, physical education, art, nursing services, band and instrumental classes, school lunch, visual aids, and library.

Planning of the Building

After further discussion and study the board of education decided to build one building in the above "central unit" for grades 1-12 provided a plan could be developed which included all of the advantages of a single building with most of the advantages of separate elementary and high school units.

The first step in implementing this plan was the purchase of 66 acres of land in a central location. This tract of land was laid out so that the elementary playground and the high school athletic fields and playgrounds are separated with no opportunity for the high school students and the elementary pupils to intermingle. A three-acre wood lot became part of the elementary playground.

The building was then placed on the plot so that the elementary rooms, all-purpose room, and elementary principal's office are close to the elementary playground, while the junior-senior high gymnasium and shower rooms are close to the high school athletic field.

The office suite, health suite, teachers lounges, central stock room, and cafeteria separate the junior-senior high school from the elementary school.

The bus loading zones are so located that all elementary pupils are loaded first and then the buses move to another location where the junior-senior high school students are loaded.

The library was planned as a school and community library. It is near the main entrance and is accessible to both the high school and the elementary school.

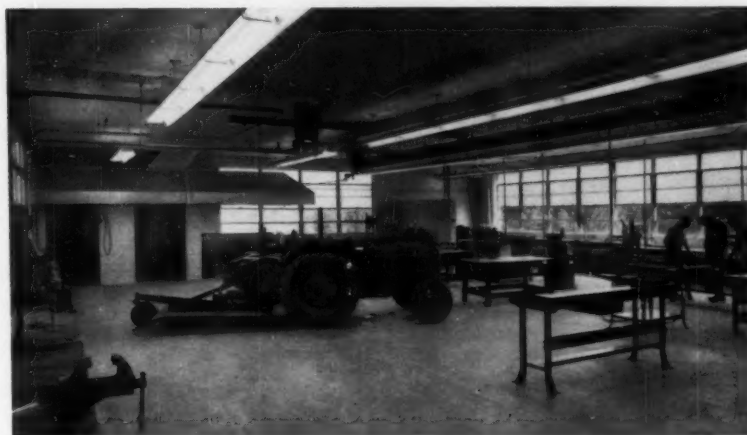
Rooms Provided

The building includes 21 elementary classrooms, a special education classroom, one 30-by-50-ft. all-purpose room, school board secretary's office, general office, intercommunication room, high school principal's office, supervising principal's office, conference room, guidance office, health suite, two faculty lounges, cafeteria kitchen, cafeteria (large enough to seat 400), library, food laboratory, clothing laboratory, living room unit and craft center, combination auditorium-gymnasium (with folding partitions), and shower rooms. There are also a music room, vocational agriculture classroom, a combined vocational agriculture and industrial-arts shop, an art room, a typing room, a student activity and office practice room, a bookkeeping room, a chemistry, a physics, and a biology and science laboratories, a science and geography room, and 15 "general" classrooms to serve the elementary grades.

The building houses 1200 pupils and was built at a per-pupil cost of \$1,249. This includes \$123,000 expended for equipment. The total contract cost of the building was \$1,239,312. The contract cost per square foot was \$11.19 for 110,826 square feet. ■



The unit kitchen room of the school's homemaking department. The academic areas of the school have painted cinder block walls, asphalt tile floors, and fluorescent lighting.



Above is shown the agricultural shop, which together with the general shop, constitute Elk Lake's industrial-arts department.



The 76- by 101-foot gymnasium has folding bleachers which will seat 800 students. At the far end is the stage for use when the room will house auditorium functions.

Bigger on the inside



brighter on the outside



Walk up North Church Street, between David Terrace and Albro Lane, and you'll see one of White Plains' most beautiful buildings—the Church Street Elementary School. If you walk inside, you'll be impressed by the roominess—53,248 square feet. Step outside again and take another look at the walls: bright vermillion panels of porcelain-enameled steel, plus high, wide, handsome windows boldly framed in steel.

There's an extra 500 square feet of floor area inside the Church Street School because the steel window walls are so slim. The porcelain-enameled steel panels are only $1\frac{1}{4}$ " thick. The outside face is 16-gage enameling steel with a permanently fired porcelain finish. Ordinary rainfall keeps the panels clean. They don't need any maintenance. The color *will not fade*. On the classroom side, the panels are also 16-gage steel, galvanized, bonderized and painted. Each panel contains a full inch of fibrous glass insulation that gives a U-value of 0.20. Heating is no problem.

Construction costs were low. The builders were able to use lighter foundation material and lighter structural sections because steel window walls are so light. Labor cost was low because this type of construction is fast and easy.

Don't you agree that steel window wall construction deserves your special attention? Write for more information. United States Steel, 525 William Penn Place, Pittsburgh 30, Pa. *USS is a registered trademark*

Church Street Elementary School, White Plains, New York
Architects: Knappe & Johnson, Scarsdale, and Manhasset, New York
Panel Fabricator: Davidson Enamel Products, Inc., Lima, Ohio
General Contractor: Riverco Construction Company, Inc.
Scarsdale, New York

USS United States Steel



Providing Storage Space



In Harvey, Ill., storage, counter, and sink provisions in the Sandburg's typical, self-contained classroom. Safe, orderly storage of wraps, class records, books, supplies, etc., is provided in cabinets, shelving, and counters.

Built-in cabinets and storage spaces should be grouped for a maximum of classroom functions in well-integrated, multiple units which avoid obstructing aisles, give quiet and efficient operation, and lend a neat flush appearance.

Several effective approaches to handling wardrobe, built-in filing cabinets, classroom sink, work counters, and open and enclosed storage units are illustrated here. The classrooms are typical of those found in three recent schools designed by Louis N. Balluff Associates, architects-engineers, Chicago, Ill.



Casework at the Havlicek school addition in Berwyn, Ill., features a large sliding door cabinet. Grouping is for easily accessible storage and ease of maintenance and uncluttered line.

— Photographs courtesy Louis N. Balluff, Chicago



In a typical classroom of the Lincoln elementary school in Brookfield, Ill., combination open and enclosed shelves-sink-counter-display-board are arranged for maximum compactness and utilization.

Patterns for Suburban ETV Growth

HERBERT B. MULFORD

Wilmette, Ill.

Emerging from the vast amount of commentary on the experiments of television as a teaching aid, is the current record of what has been taking place in the Chicago suburbs to present as a possible pattern in all other suburbs around great cities. Especially is this significant in the more than thirty areas around cities which have installed noncommercial educational television stations, which are linked together as ETV to sponsor, produce, and distribute the programs entitled National Educational Television. Events centering on Chicago's educational Station WTTW the first week in March created educational history.

Outstanding, even on a national evaluation, was a long and comprehensive demonstration for a thousand professors in higher education who had gathered in conference in Chicago under the auspices of the Association of Higher Education of the National Education Association. For their benefit actual teaching experiments were conducted at Station WTTW. These were followed by a panel of television teaching experts from wide areas of the nation. While there may have been skeptics as to the efficacy of TV in the teaching process, the consensus after the discussions seemed to paraphrase the old quotation that those "who came to scoff remained to pray."

This was the reaction the next day when the unique committee organized through Tri-County School Boards of the Illinois Association of School Boards, the Conference of High Schools, and the Superintendents Round Table of Northern Illinois discussed the demonstrations. Obviously no one could determine the influence of a thousand informed professors in higher education as educational television comes up for discussion in their classes. But the reaction of the city-suburban group was significant. Steps taken to implement their own understanding and experiments were:

1. Recommendation to continue to provide programs over WTTW called "Broadening Horizons." These have been afternoon sessions for teachers in order to acquaint them with the utility of television in their own jobs.

2. A decision to start "brush fires" of information through immediate discussion with limited groups of school administrators of the suburbs. The validity of the TV device and the practicalities of television for school districts of narrow financial ability would be considered as the more financially competent school districts begin to adopt TV procedures.

3. At the invitation of Station WTTW executives, the committee of administrators will begin to have its meetings in one

of the station's studios, thus providing atmosphere and direct firsthand contact with the mysteries of electronic education.

4. The committee gave its sanction to the suggestion that every school system in the nation should at least appoint a committee on educational television; and it should be the duty of such committees to obtain from the most important sources the reading materials now available to acquaint them with what is actually taking place over the nation.

Executives of Station WTTW set forth research facts to the broad record that wherever exclusively TV-educated students were compared with similar groups educated by usual classrooms methods, resulting in communication of information of the usual disciplines, TV students did not suffer. Indeed it was emphasized that the second highest grades in a recent

graduating class of Chicago Junior College were held by one who had only TV college education.

Possibly the most emphasis of the Tri-County discussion was placed on the problem of communicating new ideas in education. Whereas in a huge school system like that of Chicago only one administrative and board group needed to "be sold" on an innovation, in the suburbs, for instance those in the range of WTTW's telecasts, there were 350 such governmental and administrative groups to be led to an intelligent understanding. From this arose the project to start "brush fires" of information.

Already in the area significant experiments are being made. In Evanston Township High School a foundation grant is financing experimental work by means of closed circuits. Also in the next neighboring school district, New Trier Township High School has built into its new building channels for TV coaxial cables and a studio to be equipped for closed circuit lessons.

One of the most striking omissions in the thinking of many school boards and administrators is the oversight of available teaching materials. This writer on seven occasions over wide geographical distances has either supplied library materials or advised school and college authorities where such materials can be had at Washington, Ann Arbor, Mich., Urbana, Ill., or Bloomington, Ind. ■

Bringing Schools to the People

Since it is estimated that 75 per cent of the people do not read the newspapers carefully, a search was made for some device to acquaint more people with their schools. Several months ago the board of education of the Princeton Schools, Cincinnati, Ohio, purchased a "Tel-a-Story" machine to be displayed at popular stores for public relations work.

This machine is a self-contained projector containing twelve 35mm. colored slides in a rotary holder. The pictures are projected on a frosted glass screen in the front of the box. The slides move automatically, showing each picture for about six seconds. The screen cover is converted into a poster holder above the picture area. The machine is left for a week in stores in each of eight communities which make up the district. Business houses are glad to have the display in their windows or in a prominent place on a counter.

Pictures are captioned by placing white plastic letters on a black background, adapting a restaurant menu board to this purpose. The title is then set in the foreground of the picture and is included with the subject.

The last series was "Arithmetic and Mathematics in the Princeton Schools," showing activities in these subjects at all

grade levels. Everyone stops to look, as it is colorful and moving. Children bring their parents to see it (especially when they are in the picture).

Plans are to use the device in promoting bond issue and tax levy campaigns, with pictures of charts, graphs, and school conditions displayed.—Myron R. Lake, Administrative Assistant, Princeton, Ohio, Schools ■



Road Construction for Pupil Transportation

STEPHEN F. ROACH

Editor, *Eastern School Law Review*
Jersey City, N. J.

The point that numerous, and often conflicting, factors must be considered in setting up an equitable and economical pupil transportation program need not be labored so far as most experienced school administrators are concerned.

One of the many such factors involved—and one fraught with legal pitfalls—is that relating to the preparation and execution of the transportation contract itself.

A significant case¹ involving this latter aspect of pupil transportation was decided recently in the Supreme Court of Oregon.

Facts of the Case

Johnson was a school bus operator in the Wallowa county area. On September 1, 1951, he entered into a contract with school district No. 4 for the operation of a school bus during the two school years 1951-52-53.

Under the contract, he was to transport students residing in that district to and from the school operated by school district No. 12, also of Wallowa county. For his services he was to receive \$2,700 per school year, payable in advance at the rate of \$300 per month for nine months. The contract also provided that Johnson was to have an option for "the next 3 years if a bus is run and his service has been satisfactory."

Johnson operated a bus during the two-year period of the contract, and for that was fully paid.

During 1953, district No. 4 and district No. 12 were consolidated, with the latter assuming all "valid outstanding obligations" of the former.

On June 9, 1953, after preliminary nego-

tiations, Johnson wrote to the district No. 12 board stating that he elected to exercise the option. However, district No. 12 refused to accept his services, and instead operated its own bus over the same route.

Johnson thereupon brought suit, on the ground that his services had been "satisfactory" and sought \$4,500 damages for the refusal of the district to renew the contract in accordance with the option. He alleged that his cost of operation would have been not in excess of \$1,200 per year, leaving a net profit of \$1,500 for each year of the denied three-year extension.

At the conclusion of the suit at trial-court level, a judgment of *nonsuit* was granted on the basis that the contractual provision requiring that Johnson's service be "satisfactory" involved "fancy, taste, or personal judgment." Such being the case, a "lack of satisfaction on the part of the promisor [the District] is not reviewable."

In effect, the trial court held that the option was unenforceable against the school district.

The Issues

The basic issue here involved was whether the option-to-renew provision in the contract was enforceable against the school district in view of the *failure* of the other party to first formally submit his claim to the district before instituting court action.

But of even greater significance to school board members generally would be the views of the court as to the enforceability of such a contract provision had the claim *first been presented* to the school district.

As shall be seen, the present court considered both of these issues in its opinion.

Findings of the Court

In its opinion, the present court noted

that Johnson had contended that his services were in all respects satisfactory since neither the members of either school board—i.e., district No. 4 or district No. 12—nor the parents of any student had expressed any substantial complaint as to his performance of the contract. Johnson also alleged that while some members of the district No. 12 board considered that it was not legally bound by the contract—which had originally been made with district No. 4—the real reason for not renewing his contract was because the No. 12 district school board preferred that the district operate its own bus.

The opinion then noted that, upon appeal, the district had contended that Johnson's complaint was defective since he had not presented his claim to the school board for approval before bringing legal action, as was required by applicable Oregon statutes. The present court sustained this contention even though Johnson had argued that formal presentation of the claim would have been vain and useless, "as the board had already repudiated the obligation by refusing to permit him to operate his bus." In this connection the court said: "The purpose of requiring presentation . . . is to enable the board to pay or settle the claim without suit, if it so desires." It could not be said, as a matter of law, however "that compromise would have been impossible, even though the district now denies liability absolutely."

Therewith, the present court rendered judgment affirming the lower court decision.

Significantly, however, the court then went on to point out that if, in fact, a formal claim *had been presented* to the board, the judgment of nonsuit *would not* apply.

Under such circumstances, the court held the optional contract provision *would not* be one involving "taste, fancy, or personal judgment"—i.e., where the promisor would be the sole judge of the quality of the work and where the latter's right to reject the work, if in good faith, would be absolute and not reviewable by court or jury. Rather, in the court's view, the contract would involve "utility, fitness or value." Such being true, "the performance . . . need only be 'reasonably satisfactory,' and if the promisor"—in this instance, the school district—"refuses the proffered performance, the correctness of his decision and the adequacy of his grounds are subject to review."

And where a right to renewal was predicated upon the existence of mutually satisfactory conditions at the expiration of the original period—as here—one party would not be permitted to defeat the option by "unreasonable refusal to co-operate in making the operation satisfactory."

"We are of the opinion," the court continued, "that the standard of performance involved [here] is not the mere personal satisfaction of the school board, unsupported by reason, but is such performance as would satisfy a reasonable man. . . ."

Therewith, the court concluded, Johnson could establish "a prima facie case for renewal of the contract" by proving that his performance was of "a quality that should have satisfied a reasonable man under the circumstances."

¹Johnson v. School Dist. No. 12, Wallowa County; cited as 312 P.2d 591 (Ore.) (1957) in the West National Reporter System.

Grist From the Congressional Hearings

ELAINE EXTON

Hope is fading that the current session of Congress, now in its home stretch, will enact new aid-to-education legislation of a substantial character. Even if failing to provide important new financial resources for education, the second session of the 85th Congress has left a legacy of information and ideas garnered at hearings before the House and Senate Committees having primary jurisdiction over educational measures from which American schools can profit.

Printed Testimony Available

Persons interested in education will find it a rewarding experience to browse through the voluminous testimony compiled in the course of 22 days of public hearings on *Science and Education for National Defense* before the Senate Committee on Labor and Public Welfare under the chairmanship of Senator Lister Hill (D., Ala.) and the 38 days of hearings that the House Subcommittee on Special Education chaired by Representative Carl Elliott (D., Ala.) scheduled on this topic.*

Like Senator Hill they may discover they "have been stimulated again and again to new thinking about our country's educational problems" for a perusal of these records will bring knowledge of the views of some of the nation's most eminent educators, scientists, and lawmakers on the extent of the education crisis we face, their assessments of the most critical deficiencies in American

education in relation to national defense, and the solutions they advocate for remedying some of America's foremost education problems as well as the procedures they propose to upgrade the quality of education in local schools.

The statements of the more than 90 witnesses who appeared before the education committee of the Senate and the 185 different witnesses heard by a comparable body of the house reflect the whole spectrum of opinion on what the Federal Government's role should be in strengthening America's education system in general and in stimulating improvements in the teaching of science, math, and foreign languages in particular—the three subjects judged most closely related to our national security by many witnesses.

Prospecting through the fact-studded pages will yield nostalgic references to American schools of yesteryear as well as graphic comparisons pointing up the differences between the organizational patterns and objectives of our educational system and those in other lands. Or the reader can dig for data about new instructional techniques, innovations in teaching aids, activities to develop the talents of gifted pupils, and other current educational topics.

Identifying Students' Abilities

How to discover and fully utilize the maximum capabilities of the nation's youth was a recurring theme. Frederick Burkhardt, president of the American Council of Learned Societies, sounded a popular note in opening his remarks by saying that "the long-range national interest of this country requires that all its citizens obtain the best possible education and that each individual's potentialities and abilities be realized to the fullest possible extent."

Morris Meister, principal of the Bronx High School of Science in New York City, voiced the opinion that "a great deal of improvement can be obtained in both the elementary and the secondary school education . . . largely through

the recognition of the importance of identifying children of different abilities and giving each level ability the best possible education that we can."

He suggested that "any community big enough to support six or seven high schools, each with a population of 500, could afford to set up one special-purpose school (and that) in communities that cannot support that many schools, the answer would lie in developing a track or a program where good minds would be brought together for special work."

Among those stressing the importance of improving student testing and guidance activities was Dael Wolfe, executive officer of the American Association for the Advancement of Science. Underscoring the need for programs "to identify able students fairly early in their educational years and to help them to take the courses and develop the plans that will enable them to continue in educational channels to the point where they can make full use of their abilities," he expressed concern that "it is literally true a considerable number of bright children do not know that they are bright, do not think of themselves as profiting from going to college, and do not recognize the opportunities that would be open to them with further education."

Early Start in Science, Languages

Not only was the desirability of instituting programs to identify the capabilities of students much earlier than is now usually done stoutly praised, but a case was made for introducing science education and foreign language instruction early in the elementary grades.

Reminding that "a capable teacher working with a small group of children has an opportunity to discover ability and encourage interest, both basic steps in the development of future scientists and leaders of all kinds," Frances Hamilton, executive secretary of the Association for Childhood Education ad-

*The Hearings before the Senate Labor and Public Welfare Committee on *Science and Education for National Defense*, January 21–March 13, 1958, total 1602 pages. They may be purchased from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., for \$4.25 a copy.

The Hearings before the House Subcommittee on Special Education may be obtained free while the supply lasts by addressing a request to Fred G. Hussey, the Chief Clerk of the House Committee on Education and Labor, Room 429, Old House Office Building, Washington 25, D. C.. They are published in three separate volumes. Part I, August 12–November 4, 1957, concerns bills relating to Federal Scholarship and Loan Programs, 661 pages. Parts II and III, January 8–April 3, 1958, present testimony on the defense education bills introduced in January.

vised "it is in the earliest school years that the groundwork is laid for future interest in science."

Concurring with this point of view Glenn Blough, speaking as president of the National Science Teachers' Association, said "scientists and educators alike point to the importance of beginning scientific concepts and principles in the early years when children are curious and naturally interested in the world in which they live." Holding that there is a great need in the elementary schools "for a carefully planned, sequential course of study in science such as we have in other areas of the elementary curriculum" he made a plea for improved supervision and co-ordination of a science program in grades 1 to 12.

Asserting that "only a small fraction of the local school systems and not more than half a dozen state departments of education have anyone specially designated as a supervisor, coordinator, or consultant for science in secondary schools," he disclosed his association "would like to press for appointments in state departments of education—where leadership for the whole state could come—persons who are qualified to act as supervisors and consultants for science in the elementary and secondary schools."

Hammering home the point that "we need a longer and continuous sequence in the language teaching . . . an earlier start, that is, in the elementary school . . . if we are to produce the kind of citizens we need with a functional proficiency in a foreign language," Kenneth W. Miltenberger, director of the Modern Language Association's Foreign Language Program, decried the "inattention by professional educators over the past 40 years (which) has reduced foreign language study to a mere token place in the curriculum." He cited a Modern Language Association survey in 1954 which showed that 46 per cent of the nation's public high schools did not offer a modern foreign language and less than 15 per cent of the public school students were enrolled in a modern foreign-language class.

Calling the two-year sequence typically offered in public high schools providing foreign language instruction "obviously too little time for effective teaching of all the skills of understanding, speaking, reading, and writing any language," Mr. Miltenberger regretted that "consequently, language courses have too frequently become problem-solving ordeals in grammatical analysis and word-by-word translation of very simple readings" and criticized the continued use of outmoded approaches to language education.

Endorsing the expansion of public school foreign language training. Mrs.

John F. Sherman, chairman of the Elementary School Foreign Language Program of the Montgomery County (Md.) Council of PTA's stressed "the consensus of expert opinion is that foreign language instruction should be given in the elementary grades." Terming the reasons for this attitude "well founded," she spoke of the "amazing ease and facility with which additional languages may be learned when started at this age level" as particularly important.

Mrs. Sherman described "the identifying in good time of outstanding foreign language ability and interest" as a further advantage resulting from a child's making an early start and pointed out that "the learning of even one additional language opens doors of opportunity for the appreciation of the ways and beliefs of other peoples which would be far more difficult (if not begun) before unrealistic attitudes and beliefs have become fixed."

Stress on Audio-Visual Aids

Use of audio-visual instructional aids, including sound motion pictures, filmstrips, slides, and tape recordings, to improve the quality and efficiency of learning came in for frequent mention.

Affirming that "audio-visual materials and equipment can do an improved job of educational communication and can bring about improved and faster learning, with larger groups," Charles H. Percy, the president of Bell and Howell, favored introducing audio-visual aids into the school system to a greater degree than at present naming as one reason the tremendous increase in the body of knowledge that must be absorbed by the young people of today making it more than ever necessary to use effective aids to the learning process.

Maintaining that in the existence of several thousand educational motion pictures covering almost every subject-matter area of the curriculum "there is literally at the fingertips of the nation's teachers . . . a powerful resource whose use can shorten the teaching process, relieve many of the pressures on teachers, and improve the quality of education," Maurice Mitchell, president of Encyclopaedia Britannica Films, declared "the problems of dealing with some of the abstract and complex processes in nature, in science, and biology that confront teachers have been solved in thousands of classrooms around the United States by these materials."

Other Emphases

Suggesting that "good science and mathematics teachers should get both more honor and more money," physicist

Edward Teller proposed establishing an honor society for elementary and secondary school teachers of these subjects. He recommended that the members be selected on the basis of the accomplishments of their pupils in national and local competitions and science fairs, with the teachers who have produced the largest number of winners advancing to the honor society. According to his plan each member would receive an honorarium or federal stipend equal to the salary he draws as a teacher to be granted as long as he remains in teaching.

A series of ideas outlined by Werner Von Braun, director of the Development Operations Division of the Army Ballistic Missile Agency, included activities aimed at increasing the science knowledge of students.

"What about the utilization of the vacation periods by the students we want to interest in the sciences and mathematics and languages?" he inquired, commenting: "Many towns and cities conduct summer schools for the upper grades and high schools for make-up purposes, or purely social or recreational purposes. Certainly a boy or girl seriously interested in basic preparation would welcome the opportunity to continue physics, chemistry, trigonometry or allied courses and thus advance his understanding of them."

He drew attention to the possibility of admitting interested teen-agers to adult classes in their areas of greatest interest. Observing that "many districts sponsor evening schools in order to extend their services to the older generation," he asked "if a boy wants to get more math, more science than he can handle in the normal school day, why stop him from taking as big a bite as he wishes?"

Representative George McGovern (D., S. Dak) fueled the discussion with a proposal submitted by some school administrators from his state who he related were "disturbed about the fact that in South Dakota, which is rather sparsely populated, in some areas as the farm units become larger and ranching units become larger they are unable to maintain a tax base that is good enough to support good faculties, particularly in the field of mathematics and science."

He recounted their suggestion that possibly some of the larger high schools could open up a night school program, perhaps one or two nights a week, or as an alternative provide a summer school program that would operate in some of the larger schools and which students from the smaller schools would be invited to attend one or two nights a week, or perhaps a month in the summer, to take special work in mathematics and science. ■

**Proof that the slow
learner with special vocational
and social training make
a good, on-the-job
adjustment —**

The Retarded Need Special Classes

L. X. MAGNÍFICO

Director, Department of Special Education, University of Tennessee, Knoxville

In a pilot study conducted by this writer in a city with a population of 175,000, a hundred men and women were chosen at random from the following job titles: hotel porters, elevator operators, highway laborers, barbers; workers in paper box factories, laundries, and commercial bakeries; wrappers, bricklayers, fishermen, janitors and custodial workers, laborers in a bottling plant, and packers employed in furniture moving. The educational range of these workers was from two years of schooling to completion of the tenth grade in high school. The average school grade completed was the sixth.

Although there was no special effort to limit the study to those of low intelligence, save to confine the job titles to those which did not minimally require more than a low intelligence, a

check of school records revealed that the average I.Q. of the group was 68, the lowest being 48 and the highest 104. Granted that most of these workers would fall into the group classified as retarded, only a part of their number had attended special-education classes. A larger number of them, particularly those in the older group, had simply been classified as uneducable and had dropped out of grade school.

This brief study could not attempt to evaluate the effectiveness of the vocational training given these individuals, because obviously those whose training was wholly inadequate would not be employed. Therefore, it was assumed, and, indeed, proved to be the case when the employers were queried, that all the persons included within the scope of

words, although the members of the group who did not have special-class training were able to do their jobs well enough, they did not succeed in acquiring personal and social adequacy.

Harold Phelps studied a group of 163 individuals who had been enrolled in the special classes of the Ohio school system for a median of 3.4 years, and who had entered the classes at a median age of 12.7 — which represents relatively late placement. After commenting that, "as would be expected, the vast majority were employed in the semi-skilled, unskilled, and service areas," he went on to state that:

The variables which stood out most clearly in terms of good adjustment on the job were in the areas of attitudes and personal habits. This leads to the conclusion that the school should above all produce in the mental retardate attitudes of wanting to do one's best and a willingness to do his share of every job. He should also be given help in making the most of his appearance and manners so that he will be acceptable to employers and peers.¹

Coakley tabulated the job titles, duties, and wages secured by 37 mental deficient who obtained wartime employment through the United States Employment Service in Ramsey County, Minn. All of them did well in war work and earned salaries up to 67 dollars per week. Among the conclusions she drew from the study is the fact that there is no apparent relationship between wages and I.Q.²

Numerous other studies have been made to show that the mental retardate who has been properly trained can fill a functioning place in our society, which is all that we can ask of any individual. However, proper training means not only that he be given certain mechanical skills and techniques whereby he can earn a living, but also that he be taught other far more important skills and techniques whereby he can make himself a functioning part of the group to which he belongs, both at work and at home. Even the role of wife and mother is filled more capably by those mentally retarded girls who have received special-class training.

The social skills, even more than the vocational skills, cannot be taught to the mentally handicapped in the regular classes, because the needs of average students differ so drastically from those of the handicapped students, especially in the formative years. They must be separated during childhood and adolescence in order that they may live together peaceably during adulthood. Hence, special classes are the only answer. ■

this study were satisfactory as far as job performance went. But it was significant that 15 of the younger workers who had been placed in special classes while they were still attending the public schools also were considered to be the most alert and the most personally adequate workers by their employers. In addition, those who had special-class training appeared to be leading far more stable home lives than those who had not.

On the other hand, approximately 35 per cent of those who had not had special education were not judged by their employers to be very stable or reliable. In addition to leading unsatisfactory home lives and being bad credit risks, they tended to have poor records of absenteeism and drinking. Several, in fact, had police records. In other

¹Phelps, Harold R., "Postschool Adjustment of Mentally Retarded Children in Selected Ohio Cities," *Exceptional Children*, 23:58-62, Nov., 1956.

²Coakley, Frances, "Study of Feeble-Minded Words Employed in War Industries," *Journal of Mental Deficiency*, 50:301-306, Oct., 1945.

THE AMERICAN School Board Journal

An Independent Periodical of School Administration
William C. Bruce, Editor

MORE SERIOUS SCHOOLING

A LARGE-CITY superintendent of schools has suggested, in a newspaper interview, that the children of his community should enjoy their summer vacations—the schoolwork in September would be distinctly stiffer than that of previous years. If this superintendent was serious—and he invariably is—the teachers of his large school district will tackle their jobs with a renewed vigor and greater respect for the learning abilities of the youngsters. As elsewhere, in this city there will not be “drastic or revolutionary changes in traditional techniques or attitudes” as suggested in one national educational study. There will, however, be widespread and numerous gains in the devotion of teachers to their jobs. In the grade schools, there will be insistence on higher achievements in Johnny’s reading, greater accuracy and speed in arithmetic—in a word, better work in all the common subjects of instruction. In the high schools there will be better scheduling of the more solid subjects, more insistence on taking courses in mathematics, history, science, and literature.

Under such a program of more serious schooling, children will be just as happy as they have been under any easygoing scheme that in recent years provided vague excuses for barely reaching national averages in achievement in the common subjects. And the teachers will enjoy a sense of satisfaction which their better professional devotion will deserve.

EMPLOYING STAFF MEMBERS

A RECENT incident in a small Iowa community recalls the necessity of careful adherence to basic principles in the employment of teachers and administrative staff members. A high school teacher, it was found, had refused to register for the peacetime military draft in 1948, had been found guilty, and had served a jail sentence. The West Branch school board, which had hired the man, asked him to resign and caused him to leave. The teacher’s plight aroused considerable sympathy, and the board was both criticized and supported for its action.

During the past decade, the most serious troubles between superintendents and school boards—the fights over continued employment of individual principals and teachers—can be traced to carelessness or an oversight in checking the personality, the personal history, and the professional preparation of the man or woman to be dismissed. With the widely used psychological and professional test materials available and with the growth in personal interviewing techniques, it is hard to understand how an employing school board cannot have rather good advance information about a fundamental personality defect, a serious lack of correct educational philosophy, or a combination of weaknesses which made an individual executive or teacher unfit for a public school job.

The relations of teacher to pupil, of superintendent to school board, and in fact of all school personnel to the

community, require a higher ethical and moral status than that of any other type of public official. Children in their formative years need good example of respect for the civil as well as the moral law. Without such respect and compliance on his own part a teacher can hardly lead his students to respect these laws.

This matter emphasizes the truth of the old statement that the school board’s most important action is the employment of a competent superintendent of schools. On the superintendent’s day-to-day work depends not only the philosophy of education which the schools carry into the lives of the children; on the superintendent’s care in selecting teachers for the board to employ depends the character and quality of the instruction. The board cannot directly search out the total background of each teacher, but it can and must insist that the superintendent do so.

THEY NEED HELP

OF ALL major groups of school boards that need help in carrying on the task of running the schools entrusted to them by their communities, the boards in the open country receive the least inspiration and are provided the least direct assistance.

Members of country school boards offer a magnificent opportunity to state school departments, to county school administrators, and to the state school boards associations to provide simple but clear information on the whole job of directing the local school, on the state school laws, and on state instructional programs. These men and women are invariably competent and successful farmers, business or professional men. They have a practical view based on life experience and a wholesome outlook on the economy in which they are leaders. They are left too much to themselves in handling the teacher employment and school-plant problems; they need annually practical help in working out their budgets and tax levies. They deserve encouragement in joining with other districts for the consolidation of elementary schools and the establishment of area high schools. It is extremely unwise and harmful to American education to neglect rural school boards as unimportant, or difficult of improvement.

REPRESENTATIVE SCHOOL GOVERNMENT

HERBERT HOOVER, in his July 4 address at the Brussels World’s Fair, made a significant concluding statement that is of value to school boards and to educators generally.

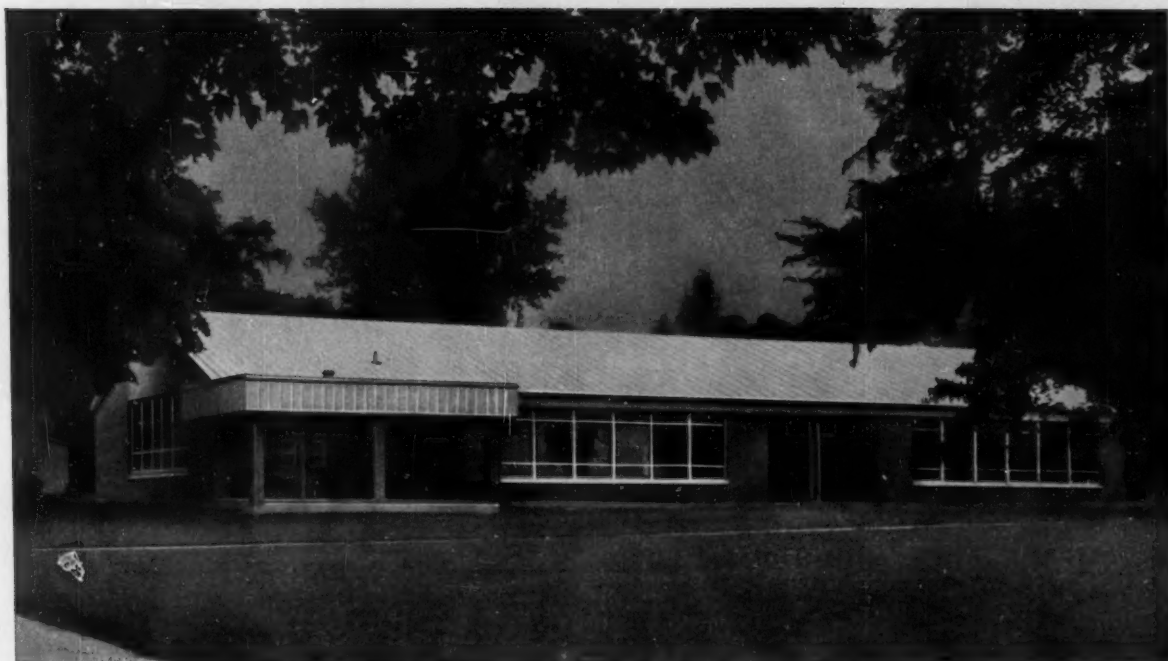
“I wish in conclusion to address directly you of the new generation. I recall to you that a great American president pointed out that to assure the progress of civilization and lasting peace, the world must be made ‘safe for democracy.’ But the word ‘democracy’ has been so corrupted that I would prefer to say to you:

“We must unceasingly strive by all peaceable means to make the world safe for representative government.

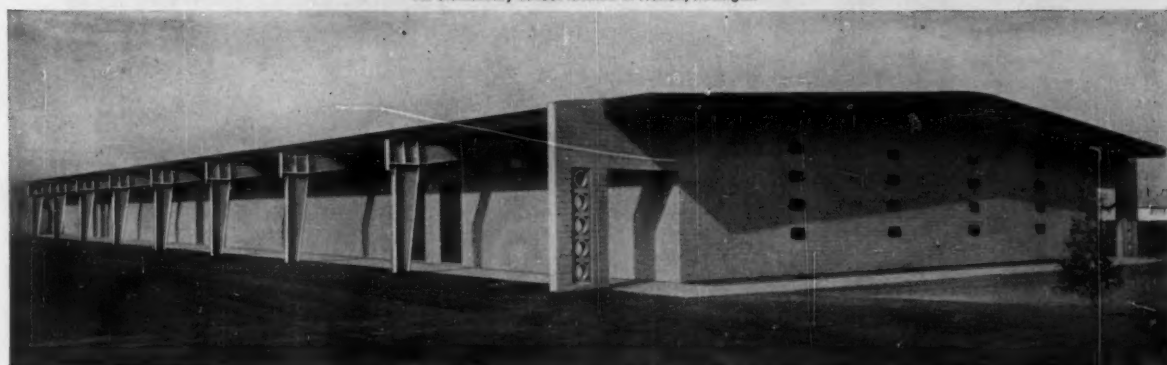
“From representative government alone can come respect for your dignity as men and women, your flowering as individuals, your right to a rising chance in life, to self-expression, and to security from sodden uniformity.”

If Mr. Hoover was not especially thinking of American schools, his statement was certainly full of implications for the school boards and their policies of controlling the schools.

The best teacher is . . . the one who kindles an inner fire, arouses moral enthusiasm, inspires the student with a vision of what he may become and reveals the worth and permanency of moral and spiritual and cultural values.—*Harold Gurnet*



An elementary school located in Holton, Michigan



Cartwright Elementary School No. 3 Phoenix, Arizona

One system of building created both of these schools on modest budgets

In spite of the vast difference in outward appearance, the schools above have one thing in common. They both provide much-needed classroom space at a cost-per-pupil that other quality building methods cannot match.

How is this possible? The answer is simple. Both schools were created with the Butler Building System—the lowest-cost way to build well.

Mass-produced Butler components were used to form the basic structures. This saved much routine engineering time and costly custom-fabrication.

The simple, functional lines of these basic Butler structures make it possible to create an architectural

treatment as modern or as conservative as you wish. Buildings can be completed with brick, block or any other material your budget or your desire dictates.

And, thanks to Butler's clear-span, rigid frame design, interiors are free of columns or overhead trusses. This permits maximum flexibility in planning classroom arrangements.

The Butler Building System has helped communities all over the country build better schools on modest budgets. For full details on the modern way to build, contact your Butler Builder. He's listed in the Yellow Pages of your phone book under "Buildings" or "Steel Buildings." Or write to us directly.



BUTLER MANUFACTURING COMPANY

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Manufacturers of Metal Buildings • Equipment for Farming, Dry Cleaning Oil Production and Transportation, Outdoor Advertising • Custom Fabrication
Sales offices in Los Angeles and Richmond, Calif. • Houston, Tex. • Birmingham, Ala. • Atlanta, Ga. • Kansas City, Mo. • Minneapolis, Minn. • Chicago, Ill. • Detroit, Mich.
Cleveland, Ohio • Pittsburgh, Pa. • New York City and Syracuse, N.Y. • Boston, Mass. • Washington, D.C. • Burlington, Ontario, Canada



no school should be without...

rest room vendors for

KOTEX FEMININE NAPKINS



The vendor for Kotex feminine napkins is a compact wall cabinet 20" high, 7" wide and only 5" deep with choices of white enamel, satin or polished chrome finishes. Streamlined—easy to install.

KOTEX and WONDERSOFT are trademarks of KIMBERLY-CLARK CORPORATION

Vending machines make Kotex feminine napkins always available to your students and teachers. More than just a convenience, handy coin-operated vendors for Kotex napkins provide a needed and appreciated service. They are available without charge.

When you offer Kotex, you provide the feminine napkin most women prefer. Only Kotex has Wondersoft—the gently spun covering that *won't rub, won't chafe*... and Kotex has the extra absorbency that's instant and complete.

Kotex feminine products sponsor, without charge, a complete program on menstrual education for both elementary and high schools. For information fill in and mail the coupon below.

***** CLIP AND MAIL *****

Kimberly-Clark  Corporation,

Department Number AJ-88, Neenah, Wisconsin

_____ Please send me further information on vending machine service for Kotex feminine napkins.

_____ Please send information on the Kotex Educational program.

NAME _____

ORGANIZATION _____ TITLE _____

STREET _____

CITY _____ ZONE _____ STATE _____

N.S.B.A. REPORT

W. A. SHANNON Executive Director N.S.B.A.

"Dear Mr. School Board Member"

August 1, 1958

Mr. School Board Member
School Improvement Road
Everywhere, U. S. A.

Dear Mr. School Board Member:

I certainly wish it were possible for me to be able to sit down with you for a face-to-face talk about some very important school board improvement plans in which you are the key figure. I wish I had such a chance with every school board member in America. But to do so I'd have to set up over 235,000 appointments, and I'm afraid I'd soon get a reputation for never being on time, even in today's world of high-speed transportation.

So, the next best thing is to write you an open letter. I sincerely hope you will read it all the way through. I think it will have some important things to say.

You, as a citizen who holds serious legal responsibilities for the public schools of your community, are aware of the fact that the health of American public education, as well as the health of the American democratic system itself, depend to a great extent upon the quality of the service which you and other school board members are able to render the public schools. If our schools are to remain the instrument of democratic freedom in this nation, if they are to remain free from the dictation of some high-placed minority regarding who or what they shall teach, then close attention must be given not only to the quality of the citizens who are chosen for school board service, but to methods and means for helping them to do as statesman-like and efficient a job as possible in discharging their very important educational duties.

Essential Ingredients

Education is a complicated business, as you know only too well. Study, careful thought, reasoned judgment, and a high degree of reliable information are essential ingredients of any effective solution of education's manifold problems. Today in America too many are too quick to render sweeping judgments as to what the public schools ought to be doing and how they ought to be doing it. Although in the interest of school improvement any criticism of public education ought to be given a hearing, many of the critical statements one hears today are based upon misinformation, or represent narrow views

which demonstrate little understanding of the broad demands which the American people place upon their schools. Ultimately it is the school board, working with professional guidance, which must resolve the educational issues which are being debated today throughout America. To do so wisely, school board members must be given every possible assistance in acquiring sound information, and in establishing reliable criteria for judgment.

An Information and Service Organization

The National School Boards Association is an informational and service organization dedicated to the belief that quality school boards make quality schools. It exists to aid state and territorial school boards' associations to improve and strengthen their organizations, services, and activities—and thus to assist local school boards and school board members to render more effective service to their public schools. The NSBA works to develop and maintain informational channels for the exchange of ideas and materials, and to prepare and distribute to its fifty affiliated associations educational information and literature for transmission to local boards. The organization is pledged to develop and encourage meetings, workshops, conventions, and study groups where school board leaders and members may prepare and qualify for more effective service to the public schools. The NSBA is concerned with informing local boards, state boards, and state and territorial school boards associations, of successful methods and techniques of school board operation, school administration, educational trends, and solutions to current school problems arrived at in the various states and districts of the nation. The association works to increase public understanding of school board service: its nature, its importance and significance to our democratic system, and, above all, the debt of public appreciation due the thousands of citizens who render such important, uncompensated service to the welfare of our communities, states, and nation.

These are just a few of the many important objectives of the National School Boards As-

sociation. The organization's program of services and activities is constantly growing and developing, particularly in the areas of publications, special study projects, and inter-associational co-operation. During the past year, for example, the NSBA has developed and distributed a number of important publications, including *Seven Studies* (the reports of outstanding consultants in seven areas of investigation wherein newer techniques and approaches bear real promise of educational improvement), *School Boards Plan for Disaster Problems* (recommended policies and procedures for handling the schools' role in disaster situations), *Paths of Action* (the major issues and problems of school board leadership in public education), *School Boards and the Curriculum* (a complete record of the speeches and papers presented during the NSBA's 1958 Annual Convention devoted to a study of curricular problems), and a number of special articles and reports.

Planned activities of the NSBA include the establishment of a "National Center for School Board Studies" in order to put research to work for school board improvement, study and determination of criteria for evaluating an entire school system (to be undertaken in co-operation with the AASA), the development of six half-hour informational films aimed at improving both school board and public understanding of the nature and significance of school board service in the development and preservation of our American democratic system, and others.

Widespread Support Needed

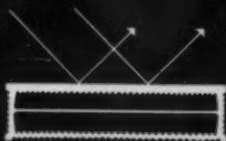
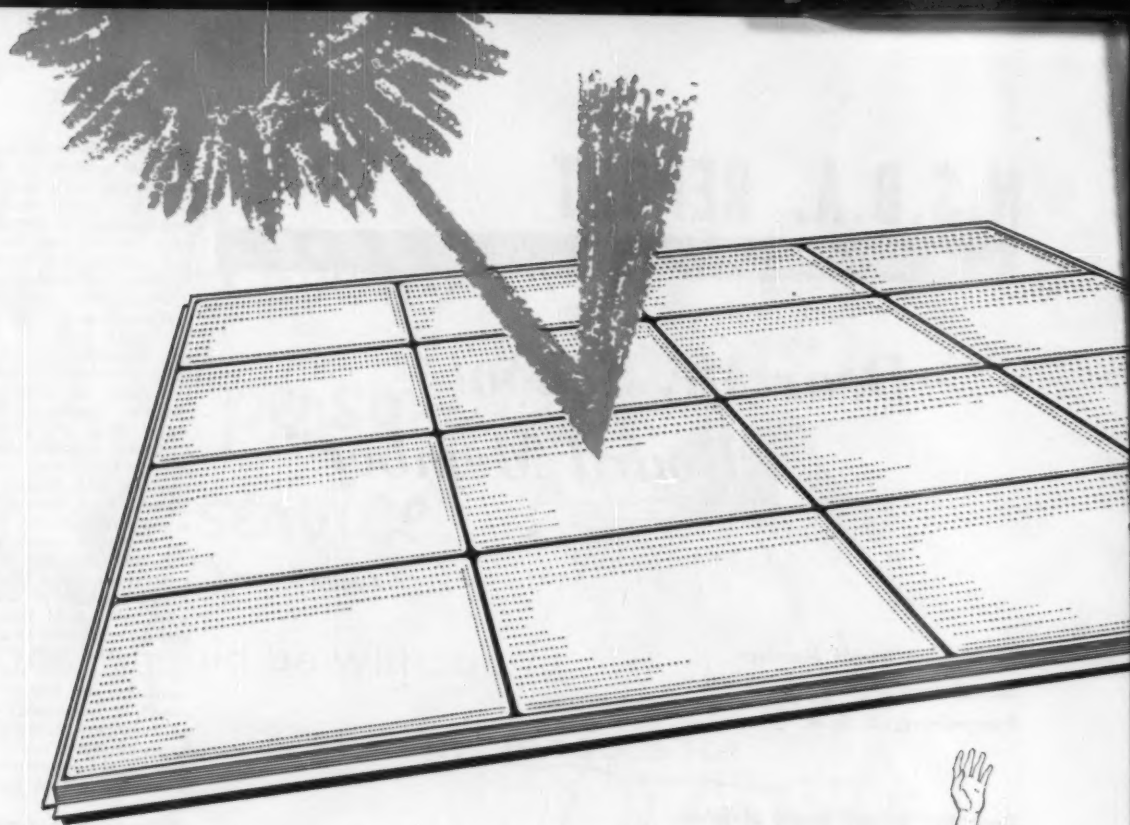
Despite the fact that the NSBA is probably the fastest growing and developing educational organization in America, it has become increasingly clear to the school board members elected from the nation each year to direct its policies and activities, that if the NSBA is to fulfill its important role in school improvement it must be given widespread support by school boards and individual school board members throughout America. The NSBA's budget, derived mainly in the form of state and territorial association dues, is so restricted as to permit only the most minimal program. If that program is to become a truly effective instrument for helping school board members to fulfill the tremendously important role which history and the American political system have assigned to them, the NSBA needs both the participating and the financial support of school board members in all parts of the nation.

Until April 19, 1958, the National School Boards Association was organized as an affiliation of state and territorial school boards associations, with no constitutional provisions permitting direct membership by school boards and school board members. On that date, the NSBA's representative Delegate Assembly approved such membership. School boards may now join and support the national organization upon payment of \$10 yearly dues, and individual school board members may do so upon payment of \$5 dues. Members receive copies of the monthly newsletter *News & Views*, of all NSBA publications, and are entitled to all other privileges of membership.

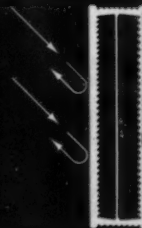
The National School Boards Association needs your participation and support. Will you join with us in strengthening the school board movement in America, in making local control of public education in this nation such an effective instrument for quality schools that few can doubt the wisdom of our system of citizen-directed public education?

Sincerely,

W. A. SHANNON
Executive Director
National School Boards Association
450 E. Ohio Stret, Chicago 11, Ill.



BUILT-IN PRISMS accept cool North light and low-angle winter sun, reflect hot, high-angle spring and summer rays.



O-I 80-F GLASS BLOCK provide the same solar heat-controlling advantages to sidewall daylighting.

NOW!...SAVE AS MUCH AS 30%

ON FAMOUS TOPLITE...

The Skylight that reflects the HOT SUN!

- Improved Performance
- Lower Installation Cost
- Fits Flat on Roof
- Thiokol-type Weather Seal

Now you can have even greater performance, strength and durability in Toplite Roof Panels* at up to 30 per cent saving in price!

The substantial price reduction on these improved glass panels has been made possible by the development of a revolutionary new cement.† This new cement is used to form the thin-ribbed grid which supports the light-transmitting glass units.


A specially designed perimeter cuts installation costs, too—because these new panels need *no expensive curb*. They project only 3" above the roof. A new O-I Thiokol-type sealant assures weather protection.

Built-in, light-selective prisms in O-I Toplites readily transmit cool North light and low winter sun, reject most of the light and heat from the high, hot summer sun. Result: a building's occupants are insulated from solar heat . . . daylight is more uniformly distributed throughout the year.

*Patent Nos. 2,812,690 and 2,812,691

†Patents pending

- Write for **NEW, LOW PRICES** and full information: Kimble Glass Company, subsidiary of Owens-Illinois, Toledo 1, Ohio

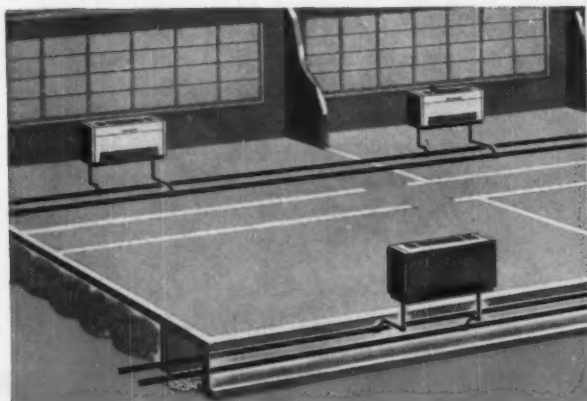
GLASS BLOCK AND TOPLITE PANELS
TWO  PRODUCTS

OWENS-ILLINOIS
GENERAL OFFICES • TOLEDO 1, OHIO

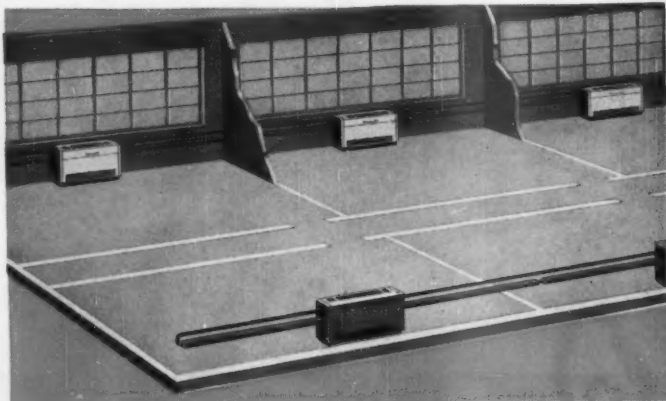


▲ Teacher and pupils are comfortable in any weather . . . in every part of the room with this Nesbitt heating, ventilating and natural cooling system. It combines the use of a Nesbitt Syncretizer unit ventilator in each classroom with Nesbitt Wind-o-line radiation installed all along the window sill (see above). Radiant heat protects teacher and pupils

against excessive loss of body heat; while convected heat along the sill warms chilling downdrafts. Three-way classroom payoff: outstanding comfort, operating economy, good appearance. Layout diagrams below help to show how the Nesbitt Series Hot Water Wind-o-line System provides protected learning environment.



▲ Conventional layout (showing how perimeter trenches are used to carry the supply and return piping under the floor), is used for both steam and hot water systems. As you can see, it calls for costly trenches or crawl space, mains, runouts and pipe insulation. All take a big bite out of your heating and ventilating dollar, and all can be dispensed with when you use . . .



▲ the Nesbitt Series Hot Water Wind-o-line System. The Nesbitt Syncretizer unit ventilator, installed in each classroom on this system, requires only about $\frac{1}{2}$ as much hot water as do conventional systems. As a result, smaller pumps and pipes are used. The only supply and return piping you need in a classroom wing (see above) is the Nesbitt Wind-o-line Radiation itself.

Here are the figures that prove you can have a

Quality Heating and Ventilating System

... within a sound, realistic budget!

Nesbitt Systems are making possible savings of as much as 20% over conventional systems in typical schools all across the country.

Some of the Recent Low Costs for Quality Heating and Ventilating Systems:

IN NEW JERSEY \$1.67 sq. ft.

Pennsauken High School,
Pennsauken, N. J.

Architect: Faint & D'Anastasio

Engineer: John Knecht

Capacity: 1800 pupils

Gross Area: 188,000 sq. ft.

Total Contract: \$2,844,659

Heating and Ventilating: \$314,986

IN OHIO \$1.91 sq. ft.

Young Elementary School,
Springfield Township, Ohio

Architect: W. B. Huff & Assoc.

Engineer: Paul Fleming

Capacity: 300 pupils

Gross Area: 22,000 sq. ft.

Total Contract: \$335,071

Heating and Ventilating: \$42,025

IN ILLINOIS \$1.41 sq. ft.

Creve Coeur Elementary School,
Creve Coeur, Illinois

Architect & Engineer:

George Poppo Wearda

Capacity: 256 pupils

Gross Area: 11,800 sq. ft.

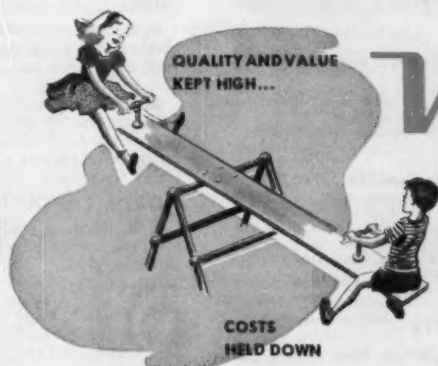
Total Contract: \$156,124

Heating and Ventilating: \$16,664

■ ■ ■ Compared with the installed costs of some other systems, the Nesbitt Series Hot Water Wind-o-line System saves you as much as 20% on construction, equipment and installation costs. Each classroom has its own Nesbitt *Syncretizer* unit ventilator for heating, ventilating and natural air cooling. And Nesbitt Wind-o-line radiation extends along the sill to protect pupils seated near windows from cold walls and window downdraft.

No other unit ventilator provides *controlled* heating, ventilating and natural cooling as effectively as the Nesbitt *Syncretizer*. When used in combination with Nesbitt Wind-o-line radiation, the result is healthful, productive comfort—free of physical distraction—for every pupil in the room whether he sits near the window or at the other side of the room. *Only the comfortable student can maintain maximum learning efficiency.*

Send for the big book on the value of controlled ventilation. More Learning per School Dollar.



Nesbitt

**THERMAL
COMFORT
ALL WAYS**

Made and sold by John J. Nesbitt, Inc., Philadelphia 36, Pa.
Sold also by American Blower Corporation and
American Standard Products (Canada) Ltd.

Fifty Years of Board Service

When educational historians begin looking for record breaking performances by lay citizens in behalf of public education they would do well to visit the small hamlet of Vilonia, Ark., and look up Dr. J. H. Downs, country doctor to four generations of hill farmers.

"Dr. Downs" as he is generally referred to by all who know him retired from the board of education April 1, 1957. When he decided not to stand for re-election he ended a half century of continuous service to the public schools of his native village. He did not sever all ties with the public schools, however, for he is still a member of the board of education of Faulkner County and indeed has been continuously since it was organized in the early 1920's.

Fifty years as a school trustee; five three-year terms and seven five-year terms; 12 elections and never an opposition candidate; that's the record of Dr. Downs. But there is more. Immediately after his election he was chosen by his fellow trustees to be clerk of the board and he held that job for 50 continuous years. As clerk of the board he was, therefore, the chief financial officer of the district. He kept all the records, wrote all the checks to pay teachers and other obligations, and never had any paid clerical assistance during any of the time.

He was asked by this writer, a lifelong friend and for many years his patient, "Why did you want to serve as a school trustee and why did you stay on the job so long?" His answer was quick and direct, "I wanted to do something constructive for the people in my village and after starting I just couldn't stop."

We asked the question most frequently put to distinguished people like Dr. Downs, "What are your impressions of the progress made in education during the past half century?" He smiled and replied, "The progress has not been startling, but rather slow and sure." Children may not learn their lessons as thoroughly as they did when I came on the board, but they are better educated—they know much, much more."



J. H. Downs

"What have been your most vexing problems during these years of gratuitous service, we asked. "That's easy," he replied. "Transportation—when you and I went to school we walked or rode a mule, but today we do better by our children. But the more we give them in the way of comforts, the more they seem to expect. At first, after consolidation, we transported beyond the two-mile limit, but now we pick the students up closer and closer to school and still have demands on the part of parents for better service."

The Vilonia district has 109 square miles now as against about 25 when Dr. Downs first served the board.

Dr. Downs attended school as a grade school boy in his native village of Vilonia. He showed us a copy of a mortgage his father sold on his home to help buy the

first schoolhouse in the community. In those early days and even when he became a board member, schools were not operated entirely from tax money. Each citizen who had children "bought stock" in the school and with this money the building was purchased and the high school department was supported.

After finishing high school in another village where his former teacher moved, he was licensed to teach and did teach one year in Vilonia. He was admitted to medical school in the fall of 1903, was graduated in May of 1907.

Dr. Downs is still active in all phases of community life. He goes to the office daily; he makes home calls, including night calls. He supervises his farms and acts as senior citizen adviser to all who seek his counsel, and they are legion. Many, like the writer, received all of their public school education during his tenure as a school trustee. We know that but for him we would not have had quite as much as was our birthright. — J. B. Scott, Superintendent, Peekskill, N. Y., Schools.

PERSONAL NEWS

ARIZONA

Richard Hinze has been elected assistant superintendent at Phoenix.

CALIFORNIA

Chester R. Ingils is the new superintendent at Eureka.

Supt. James H. Williams, of Glendale, has been re-elected for a four-year term.

Mrs. Jeanno Van Note has been elected president of the board of Palos Verdes district board.

Dr. Stuart F. McComb has been elected superintendent of the Ranchito district elementary schools.

Walter L. Pulliam is the new superintendent of the Live Oak school district.

COLORADO

George W. Frasier, president-emeritus of Colorado State College, died in Phoenix, Ariz. He was president of the College for 20 years.

ILLINOIS

Ashley E. Arnold has been elected president of the Elgin district board.

Ralph Ruggles is the new president of the Moline board.

J. W. Tobin is the new president of the Springfield board.

INDIANA

John H. Davison is the new superintendent at Rochester.

Charles W. Puff is the new superintendent of the Orleans consolidated schools.

IOWA

Supt. Marvin T. Nodland, of Sioux City, has been re-elected at an annual salary of \$17,500.

LOUISIANA

Marshall D. Peel, Sr., has been elected superintendent of the Franklin parish schools in Monroe.

MASSACHUSETTS

John T. McDonough has been elected presi-

dent of the Massachusetts Association of School Committees.

MISSOURI

David W. Hopkins is the new president of the St. Joseph board.

NEBRASKA

Richard R. Short is the new superintendent at Hastings, succeeding Merle Molton.

Lauren Schwisow has been elected superintendent of schools at Scottsbluff.

NEW JERSEY

Joseph F. Zach is the new purchasing agent at Asbury Park.



The West Windsor Township Board of Education awarded Maurice H. Hawk the honorary title of secretary emeritus of the board of education for his 44 years of continuous service as board secretary. Mr. Hawk is prominent in social and religious circles and has served for

29 years as treasurer of the West Windsor Township.

NEW YORK

Supt. Paul A. Miller, of Syracuse, has been re-elected for a new five-year term, at a salary of \$20,000 a year.

OHIO

D. D. Sims, superintendent of schools in Port Clinton, has announced his retirement in August. Mr. Sims has completed 41½ years of educational work.

Earle Liggitt, superintendent of schools in Mundall, for 20 years retired at the close of the past school term. Dr. Liggitt has served public education as a teacher and an administrator since 1913.

NORTH CAROLINA

R. N. Harris, a leader in Negro civic affairs, has been appointed a member of the board at Durham, N. C.

TEXAS

Dr. Edwin L. Rippey has been re-elected president of the Dallas board. Mrs. T. H. Rutherford was named vice-president.

TO MERIT PAY

(Concluded from page 10)

the fact that the people of this country believe in reward according to quality of service rendered and because superior teachers are always in short supply and average teachers are more plentiful. Few laymen advocate or would approve a merit pay plan which had for its purpose paying average teachers less. They are interested in a plan which will pay superior teachers more. Every community knows who its best teachers are, every principal knows, the pupils know. All the organized teaching profession can do is to keep the best teachers from being rewarded for the greater service they render. This is a disservice to the profession and to the children it purports to serve.

Several things may happen unless some way can be found, acceptable to teachers, for rewarding superior service. As salaries ascend higher and higher, due to further inflation, the teacher shortage, and collective bargaining, the taxpayer may rebel. His rebellion may result in his refusal to vote the necessary funds with which to operate schools on their present basis thus requiring a curtailment of the school program in some communities. Or his rebellion could result in a legislated merit pay plan. Either of these results would be a great calamity in that they would seriously affect the education of children and would damage the teaching profession in the eyes of the public.

It is also possible that the *status quo*, a stalemate, may persist. This situation now exists in many communities. The organized teaching profession, by its unwillingness to accept and try any merit pay plan, and the public, by its apathy in helping to work out such a plan, both fiddle while Rome burns. This is too bad for the children because superior teachers seek employment in some other state or some other school system where a higher value is placed on their services (not to mention the superior teachers who seek employment in industry).

Teachers can, if they will, get in and help develop a merit pay plan. This has been done in a few places, usually with some success. Teachers can see that such a plan gets a fair trial, that if it is not wholly satisfactory, changes are made in it. They can help a school system to retain some of its best teachers.

The school board and the administrator can, if they will, furnish leadership to staff and community in meeting the problem of merit pay reasonably, objectively, and without prejudice. If they do this and all groups will co-operate, the best interest of education, of teachers, and of the children all serve will be advanced. ■



R-W No. 785 "IN-A-WALL" Steel Wardrobes . . . designed to provide functional beauty, modern color harmony and flexibility of arrangement.

Individual door operation, full recess opening, no obstructing hardware, rigid durable construction for years of easy, dependable operation.

Richards-Wilcox

WARDROBES

for
**SCHOOLS
CHURCHES
INSTITUTIONS**



R-W No. 775 "VERTICAL-LIFT" Wardrobes . . . available in Aluminum or Wood Veneer in either a solid or hollow core design, electrically or manually controlled. A modern wardrobe combining maximum strength with dependable, easy operation.



R-W No. 781 Wardrobes . . . doors open in pairs providing unobstructed entryway, easy and economical to install.

Also available are the R-W No. 883 Wardrobes with multiple operating doors, and R-W No. 780 Wardrobes with individually operated doors.

R-W offers a complete line of Wardrobes that combine modern styling, dependable, trouble-free operation and flexible adaptability . . . units that are backed by years of research, development and field experience. R-W Wardrobes are designed to economically meet the requirements of today's schools, and to fulfill these requirements for years to come. If you are planning a new school where you desire up-to-date clothing storage, you will find R-W Wardrobes are engineered to fit the job.

Your local R-W Sales Engineer would appreciate the opportunity of telling you about R-W Wardrobes . . . call him today or write to us for complete information.

SEE OUR CATALOGS IN SWEETS
PARTITIONS ^{22d} RI WARDROBES ^{23d} RI

NOTE . . . R-W also manufactures a complete line of sound insulated folding partitions for gymnasiums, auditoriums and classrooms. Write today for complete information.

Richards-Wilcox

MANUFACTURING COMPANY

SCHOOL EQUIPMENT DIVISION



510 W. THIRD STREET, AURORA, ILL. • Branches in Principal Cities



Even the boy in the corner

Trane Kinetic Barrier Action eliminates

Here's modern ventilation—designed for the modern school! It's the *TRANE Kinetic Barrier* system that gives each pupil—no matter where he is seated—an ideal climate for learning.

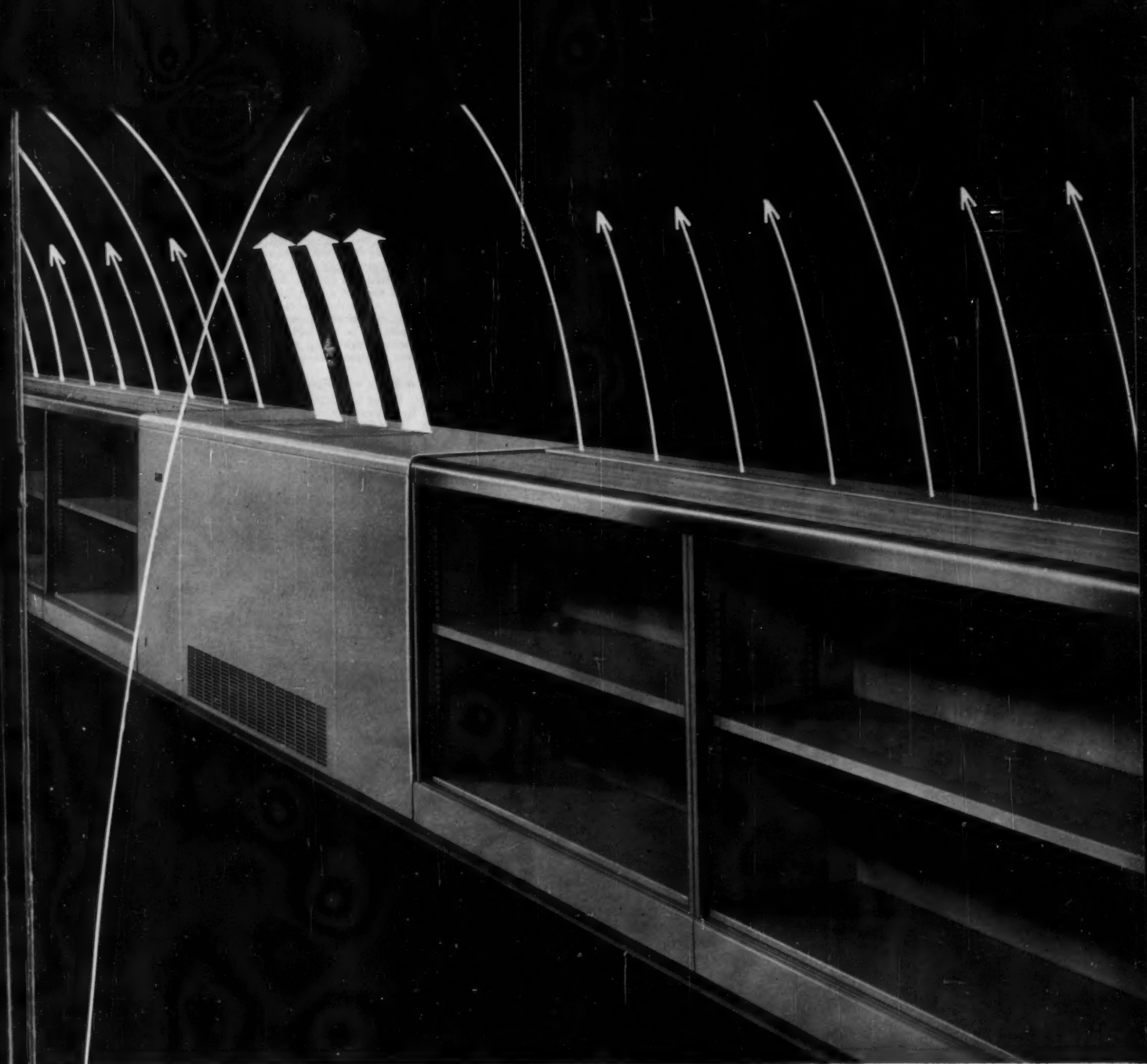
With this new, exclusive approach to classroom ventilation, a "wall of air" rises continuously from the *TRANE* Unit Ventilator—along the entire wall or window run. As the air reaches the ceiling, it picks up room air, creates a gentle, circling flow of ventilation across the entire room. Result: heating and ventilating are uniform. No hot spots, cold spots, stale air pockets anywhere—any time! The exclusive *TRANE Kinetic Barrier* system ventilates every corner . . . every minute of the day.

And this continuously rising barrier of tempered air along outside windows stops window downdrafts. Pupils have

positive protection from dangerous drafts no matter where they are seated. Protection is room-wide, too—because the air is forced from *wall-to-wall* extensions. Protection is continuous—because the "wall of air" rises from the *TRANE* Unit Ventilator all the while the room is occupied.

TRANE Unit Ventilator's modern styling . . . new colors . . . new built-in look complement today's school design. Convenient shelving provides needed storage space. Trim aluminum extrusions make the units blend into one clean, continuous line. New "hardtop" laminated plastic covers come in five modern patterns to blend with any interior.

So for an ideal climate for learning, have your architect or consulting engineer contact his nearby *TRANE* Sales Office—or write *TRANE*, La Crosse, Wisconsin.



has a fresh air seat
hot spots, cold spots, sleepy corners



IN LOCKER ROOMS, gyms, pools, auditoriums, the TRANE Torrivent heats and ventilates at the same time. Compact and versatile, the Torrivent requires only a small amount of ceiling, wall or floor space.



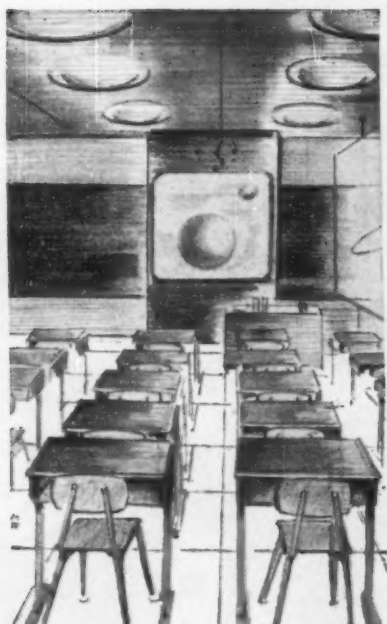
IN STAIRWAYS, standard TRANE Convectors combine beauty with efficiency . . . fit where other types of units won't. Complete line of free-standing, recessed and wall-hung models for any heating need.

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**MANUFACTURING ENGINEERS OF
 AIR CONDITIONING, HEATING, VENTILATING
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THE TRANE COMPANY, LA CROSSE, WIS. • SCRANTON MFG. DIV., SCRANTON, PA.
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modern classroom



modern seating

by *Arlington*

A complete selection of quality school furniture, in sizes and types for every school and grade. Modern design, modern colors and proved construction.

and TEACHER'S DESKS, single and double pedestal types. In colors and design to match classroom seating.



For information write for Catalog 58.

ARLINGTON SEATING COMPANY
ARLINGTON HEIGHTS • ILLINOIS

NEW BOOKS

Class Size in Elementary Schools of Urban Districts

Prepared by Ray C. Maul. Paper, 19 pp., 50 cents. National Education Association, Washington 6, D. C.

This report seeks to determine (1) how large are the classes in elementary schools? (2) how many additional classrooms and teachers are needed to observe better limits of class size? (3) to what extent are elementary pupils limited to half-day sessions?

The report indicates that in all urban school districts the median class size is 30.7 and the average 30.1. The worst situations are in the southeast region of the country, and the most difficult problems are in the 18 largest cities where the median class size is 33.9, and the average 33.2.

The report indicates that in urban districts, the addition of almost 94,000 classrooms and teachers would be the immediate cost of bringing elementary classes in excess of 25 pupils to that standard. More than 31,000 rooms would be required to level off the larger-than-30 classes to that size. No region escapes the challenge and responsibility. It has been necessary to resort to half-day sessions in districts of all sizes and all geographic regions. The number of pupils involved is estimated at 298,787.

Enrollment Picture for the Decade Ahead

Research Series No. 3, March, 1958. Paper, 15 pp. Department of Public Instruction, Harrisburg, Pa.

Dr. Carl Morneweck and his associates in the Pennsylvania Department of Public Instruction have done magnificent work in predicting population changes, enrollment, teacher needs, etc. The present study looks back 40 years and forward 10 years. It shows that not only has there been a terrific increase in population but an increase in the rate of population and enrollment growth. While the figures are limited to Pennsylvania, the method will help any local school board to make reasonably safe predictions.

Standards for Survey of Reading Material in Public Schools

By William B. Terrell. Paper, 76 pp., \$1.25. Gulf School Research Development Association, Houston 4, Tex.

This publication reports the results of a survey of the quantity and quality of reading materials used in an unstated number of Texas school systems. The survey instrument which was tested in an earlier study and revised for the present survey is included. The instrument can be applied to any elementary or secondary school, or to a combination campus-type school.

Research in the Three R's

Edited by C. W. Hunnicutt and William J. Iverson. Cloth, 446 pp., \$6. Harper Brothers, New York 16, N. Y.

This book represents the results of a study involving the searching out and evaluation of published research in the three R's. From thousands of available investigations the authors have selected the 78 key reports which appeared to be most significant and most promising of assistance to teachers.

Also Received

Analysis of Research in the Teaching of Science
By Ellsworth S. Osbourn. Paper, 55 pp. Bulletin No. 7, 1958 of the U. S. Office of Education. Superin-

tendent of Documents, Government Printing Office, Washington 25, D. C.

This report summarizes and analyzes the research in science teaching reported from July, 1955 to July, 1956 on the three traditional levels of education. The investigators concluded that (1) a striking amount of economic and cultural determinism exists in connection with going to college; (2) there is a pressing need for more scholarships to reduce the loss to higher education of high-ability students; (3) higher education is losing up to one half of the top 30 per cent of the nation's high school seniors; (4) lack of finances and lack of interest have equal weight in causing the loss.

A Study of Religion in the Public Schools

Edited by Nicholas C. Brown. Paper, 230 pp. American Council on Education, Washington, D. C.

This is an appraisal of the present situation of the problem of the study of religion and the teaching of religion in American public schools. The findings as reported in detail for 1957, include the comments of Protestants, Catholics, and Jews.

Admission Policies for Kindergarten and First Grade

Bulletin No. 3, April, 1958. 49 pp., \$1.50. Research Division, American Association of School Administrators, Washington 6, D. C.

This bulletin reports the results obtained from a questionnaire sent to all urban districts over 100,000 in population, to about 400 smaller urban districts of 2500 to 100,000 population, and to a group of county and suburban school systems which were not included in these classifications. A substantial majority of schools admit children to kindergarten at either 4 years 8 months, or 4 years 9 months. Of the 417 schools which operate kindergartens, 157, or 37.6 per cent, admit at 4 years 9 months. First-grade admission policies are concentrated at 5 years 8 and 9 months. Of 532 systems, 145, or 27.3 per cent, set the entrance age at 5 years 9 months, while 123 designate 5 years 8 months.

Manual of Operations

Compiled by R. C. Glazier. Paper, 98 pp. Published by Board of Education, Springfield, Mo.

This manual explains and implements the rules and regulations of the Springfield board of education in the thousand and one situations continually met by teachers and other staff members. It is wisely recommended that changed conditions and unusual problems be met in the light of the basic ideals on which the schools—and these procedure rules—are based.

Improving the Schools' Audio-Visual Program

By Robert E. Schreiber. Paper, 23 pp., \$1 per package of 12 bulletins. Educational Materials Center, Northern Illinois University, DeKalb, Ill.

This handbook provides tested, effective procedures for facilitating the distribution and use of audio-visual materials and equipment within the schools. Specific suggestions are provided for selecting, using, and evaluating motion pictures, filmstrips, and recordings, projectors, etc.

Guide to the Improvement of State School Finance Program

Paper, 30 pp., 50 cents. National Education Association, Washington 6, D. C.

This document, which is a revision of a similar statement proposed in 1949, reflects widely the thinking of public school people on state and local school taxation. In addition to a statement of basic concepts for a legal system of public school support and a series of recommendations for better state and local policies, the authors add a list of nine questions on state programs which deserve study; they add finally seven desirable trends which should be given support. This "guide" is the most valuable statement for bettering school support now available. School board members who have a broad view of local governmental support will not always agree that all the implied independence of school support is possible without harm to balanced local and state governmental support.

Creative Planning of Parks and Play Areas

Edited by Raymond C. Schneider, R. Dudley Boyce, and Ted T. Peterson. Paper, 67 pp., \$2.50. The School Planning Laboratory, School of Education, Stanford University, Stanford, Calif.

This useful publication presents recommendations for developing parks and play areas "for learning, living, and leisure." The material is based on studies carried on in California cities and school districts. An additional section of the pamphlet includes papers on the planning of school buildings for better balance of utility, quality, and economy. A brief paper on all-year-round air conditioning provides special new and useful ideas.

News of Products for the Schools

CLOSED-CIRCUIT ETV SYSTEM

A new closed-circuit television system has been designed especially for educational use by Allen B. Du Mont Laboratories, Inc., Clifton, N. J. This ETV package operates



Close-up of Video Monitors

with a minimum of electronic equipment and eliminates the need for a fixed studio and fixed control room. The two cameras mounted on tripods and dollies, and a 15-lb. control board are easily moved from classroom to classroom. The ETV package includes two cameras, switching and remote-control position equipment, an audio system for sound to and from the instructor, two video monitors (one for each camera), a standard TV receiver to be used as a line monitor, and all RF distribution accessories and transmitting units. One camera has a fixed wide-angle lens for a general-area picture. The other has a three-lens turret that is easily focused and maneuvered for close-ups. The system is recommended for use with standard television receivers rather than expensive video monitors.

(For Further Details Circle Index Code 0104)

POWER UNITS FOR SCIENCE LABS

Lab Volt is a new power package which supplies safe, low-cost, and convenient electric power to the high school science laboratory. The compact 8 $\frac{3}{4}$ by 4 by 6 $\frac{1}{2}$ -in. power units are easily installed, permanent, and will fit into the aprons of science laboratory tables leaving the top clear for student work. The unit operates on a regular 110-volt A.C. outlet and will supply A.C. or D.C. currents. The moderately priced units are available from Buck Engineering Co., Inc., Freehold, N. J.

(For Further Details Circle Index Code 0105)

FINNED RADIATION FOR SCHOOLS

An easily installed new unit for finned radiation has been made available by the American Air Filter Co., Louisville 8, Ky. The Herman Nelson Type Q Finned Radiation, especially adaptable to school buildings, is designed and constructed to last the life of the building. The radiation unit presents a pleasing appearance with its use of concealed fasteners,

rounded corners, a minimum of seams, grille-free cover front, and a wide selection of colors. Available with either manual or automatic controls, it can be used with any type of steam or hot-water heating system. Send for a descriptive bulletin, No. 665-A1.

(For Further Details Circle Index Code 0106)

COLORED STEEL BUILDINGS

Development of a durable, low-cost color coating designed for application to steel buildings has been announced by Stran-Steel Corp., Detroit 29, Mich. The Stran-Satin Color is not a paint, but a two-layer protective coating of vinyl aluminum applied at the factory to steel panels, which are then shipped to the construction site. After rigorous tests, the company reports, the tested samples will withstand exposure with no deterioration to the finish coat, no loss of adhesion, and no corrosion of base metal. According to the company, the color coating will not blister, peel, crack, or fade. The firm now offers buildings in a choice of blue, green, bronze, rose, gray, and white, as well as the regular metal finish. Stran-Steel Corp. manufactures a complete line of prefabricated steel buildings.

(For Further Details Circle Index Code 0107)

LUMINOUS CEILINGS

Over-all ceiling illumination, developed by Smithcraft Lighting Co., Chelsea 50, Mass., may well be used in schools and institutions where natural lighting is restricted or non-existent. More than 400,000 sq. ft. of Smithcraft Area Illumination has been installed in the three new Ford Staff and Product Engineering Buildings in Dearborn, Mich. In



Fully-Lighted Corridors

these buildings, the lighted ceilings are used in cafeteria, offices, and corridors (see photo). The fluorescent lighting averages 90 foot-candles and is glare- and reflection-free. Lamps are shielded by white egg-crate louvers, 48 by 27 in. The system conceals a network of pipes, ducts, and beams, and acts as a support for acoustical material. Decorative and easy to install, it may be used with other ceiling materials to form patterns or ribbons of light.

(For Further Details Circle Index Code 0108)

CUSHIONED PLAYGROUNDS

The Outdoor Safety Carpet, developed by the Firestone Tire & Rubber Co., Akron 17, Ohio, greatly reduces the possibility of in-



Safety Padding

juries suffered from falls on playgrounds. Consisting of vulcanized rubber paving blocks, it acts as a cushion under the critical areas of playground apparatus. The 18-in. square blocks are installed as easily as asphalt tile. They can be laid on the resilient Rub-R-Play Surface, an earlier protective device developed by Firestone, or on harder materials such as blacktop or concrete. The use of the Outdoor Safety Carpet deflects cuts, fractures, skinned knees, and even more serious injuries.

(For Further Details Circle Index Code 0109)

INDIVIDUAL SHOWER CONTROLS

A trend toward individual shower controls is becoming more apparent in dormitory installations, according to the Powers Regulator Co., Skokie, Ill. The firm, reporting on the "overwhelming specification" for individual-type controls over gang-type controls, points out the hazards of the gang-type shower. With an individual thermostatic control in each shower sudden flashes of extremely hot or cold water are eliminated and the water remains at the desired temperature. The new control can be set at any point between 65 and 110 degrees. It has an automatic shut-off if the water temperature should rise above this point.

(For Further Details Circle Index Code 0110)

ROTARY FILES

Diebold, Inc., Canton 2, Ohio, has made available the Dile-A-File, a new concept in handling large quantities of record cards. By turning the dial, which turns in either direction, the records needed are immediately produced. The record trays are matched for handling records of uniform size in each file. An electrically coupled brake, operating directly on motor shaft, assures positive, noiseless, and smooth stopping action when records reach working position. The files are designed to continue operating if record trays have been removed. The functional files are mobile and are available in three sizes.

(For Further Details Circle Index Code 0111)

(Continued on page 48)

CORRESPONDING CODE INDEX NUMBERS TO BE ENCIRCLED CAN BE FOUND ON THE CARDS IN THE READER'S SERVICE SECTION

(Continued from page 47)

WORKBENCH STORAGE SPACE

An interesting new shop table, manufactured by The Tolerton Co., Alliance, Ohio, combines a workbench top with 12 individual lockers below. The lockers have ball-point fasteners, mating pulls, and lugs for padlocks. The northern hard maple top is laminated and



New Shop Bench

features steel splines on sides and $\frac{3}{8}$ -in. through bolts which will eliminate bowing or sagging. Called the 4 Student Stor-Mor Bench, No. TM-12 FA, it is available in baked green or gray enamel.

(For Further Details Circle Index Code 0112)

MULTIPLE AIR-CONDITIONING UNITS

Requiring about 500 tons of cooling, the University of Miami recently installed about 120 three- and five-ton fan cooling and air-conditioning units in what is believed to be the first school application of this equipment.

Units are components of the recently announced Trane Climate Changer packaged air-conditioning line made by The Trane Company in its new Clarksville, Tenn., plant. With these units, individual temperature control for each classroom is possible, even in large classrooms where ordinary room-size units cannot be used. The units feature remotely located waterless compressor-condensers with compact blower and heating-cooling coils.

(For Further Details Circle Index Code 0113)

PADLOCK STORAGE CABINET

Locker padlocks can be filed and stored easily in the new Tel-Lox cabinet manufactured by P. O. Moore, Inc., Glen Riddle, Pa. Sturdily constructed of steel with a gray enamel finish, the cabinet has free-swinging panels that hold 392 locks. It can be hung on a wall or attached to a movable table for easy distribution of locks. Each locker hook has a numerical indexing system that helps in keeping accurate records of the lock distribution.

(For Further Details Circle Index Code 0114)

3-D PRINTED MAPS

Contour Relief maps by Weber Costello Co., Chicago Heights, Ill., illustrate mountain areas in realistic three dimensional printing. According to the manufacturer, precise shading along contour lines produces an accurate portrayal of the elevation pattern of the mountains. The maps are available in a complete series of wall maps for the continents, the world, and the United States and Canada. Write for a free illustrated brochure.

(For Further Details Circle Index Code 0115)

FROM BENCH TO TABLE-BENCH

Serving as a bench and/or table, this new seating unit, produced by the Sico Mfg. Co., Minneapolis 24, Minn., can be stored compactly and easily. The No. 2800 Bench-to-Table unit adds versatility to quality construction and modern design. A simple folding-lifting action converts the back of the bench



For Multipurpose Rooms

to a table-bench. The unit is available in lengths of 6, 7, and 8 ft. and requires only 7 in. of storage space when folded. The unit features a chassis constructed of 14-gauge plated steel, a 15-in. table top of melamine plastic, and a 12-in. plasticized board bench.

(For Further Details Circle Index Code 0116)

(Continued on page 49)

CORRESPONDING CODE INDEX NUMBERS TO BE ENCIRCLED CAN BE FOUND ON THE CARDS IN THE READER'S SERVICE SECTION




POSTURE

PERFECT



QUADRILINE
by american desk

Available in graduated heights, the No. 600 Chair Desk is designed to provide maximum work area, ease of entry, proper elbow support. Fibre-plastic top size 23" x 21". Available with Fibre-glass back and seat.

american desk manufacturing co.  temple, texas



ALL-AMERICAN HEAVY DUTY

**UNIFORM
HANGER**

**Faster, More Thorough and
More Hygienic Drying . . .
More Efficient Handling
of All Your Athletic Gear**

Accommodates a complete football or basketball uniform, solves the problem of drying and storing sweat soaked athletic gear. Extra heavy steel rod, electrically welded into single unit. Molten tinned finish protects permanently against rust or corrosion. Individually numbered.

Each, complete with
Number Plate, f.o.b.

\$1.70

our Texas Mill.

★ Write for literature on American Approved Gymnasium
Baskets, Steel Basket Racks and Dressing Room Equipment

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PLAYGROUND DEVICE CO., ANDERSON, IND.

WORLD'S LARGEST MANUFACTURERS OF FINE PARK, PICNIC,
PLAYGROUND, SWIMMING POOL AND DRESSING ROOM EQUIPMENT

News of Products ...

(Continued from page 48)

ARMCHAIR WITH WRAP RACK

A convenient wrap rack is attached to the tablet armchair, Model 875TA, offered by Durham Mfg. Corp., Muncie, Ind. The wrap rack is constructed of the same durable tubular steel as the body of the chair. When the chair is folded the rack converts into a carrying handle. It is extended out far enough from the back of the chair to be of service, yet not so far as to be cumbersome or in the way



Easily Folded Student Chair

of the person sitting behind. The arm of the chair has a five-ply hardwood core with a northern maple back treated to resist marring, scuffing, and discoloration. Available in colors of beige, taupe, and brown, it can also be ordered with upholstered seat, No. 877TA, or plywood seat, No. 874TA.

(For Further Details Circle Index Code 0117)

MASTER CLOCK AND PROGRAM SYSTEM

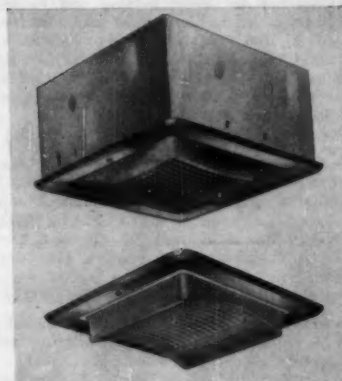
A master clock and program system announced recently by Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., combines operating functions in one control panel, operated by one building engineer. The Master Clock and Program system monitors and adjusts temperatures in any area of the building, or provides for automatic setback of temperature during nonworking hours with automatic return to higher levels the next morning. In addition, the system synchronizes the operations of any number of secondary clocks, adjusts program to ring bells and turn lights on or off at certain times. Installation of the system is supervised by the manufacturer, who will also provide the building owner with a year's free service.

(For Further Details Circle Index Code 0118)

NEW LIGHTING FIXTURES

Edwin F. Guth Co., St. Louis 3, Mo., has developed a new line of square recessed incandescents, called Brascolites. Available with both Holophane and Corning lenses, the fixtures feature Alzak aluminum reflectors. There

are lenses for almost every incandescent lighting need: for intensive, diffusing, concave, and symmetrical lighting. The trim luminaires are



Incandescent Fixtures

constructed of heavy-gauge steel with die-cast frames that fit snugly into the ceiling and prevent light leaks. Units can be relamped from above or below. One-piece reflectors are easily removed for quick maintenance. Write for more information.

(For Further Details Circle Index Code 0119)

(Concluded on page 50)

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VOGEL-PETERSON



CUSTOM-LINE Aluminum HAT and COAT RACKS

Tailored to fit any given open or closetted wall area. Smart in design and modern in "clear", "gold" deep etched anodized finishes and combinations. Quality built—closed-end aluminum tubing, rigidly held in cast aluminum brackets that are adjustable for height in dovetailed mounting extrusions. Brackets also adjustable to any desired centers.

3 BASIC SHELVES



Write for Bulletin CL-206

VOGEL-PETERSON CO.

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THE CHAIRS WITH NO "WEAR OUT" ARE FOLDING METAL CHAIRS BY DURHAM

In folding metal chairs, specify DURHAM and get durability along with the most handsome styling and best value for your equipment dollars. Buy Durham chairs for classrooms, auditoriums, cafeterias, conference centers — anywhere you need chairs easy to set up, fold, store, and set up again. Solid comfort too! Write today for catalogs. Be sure of the best — buy DURHAM!



Complete line of tubular and channel steel frames, all-metal and upholstered styles for adults and juveniles. Also stack chairs, folding tables, chair-ladders, steel shelf units and utility carts. See our catalog for superior construction features.

New Folding Tablet Armchair



Exclusive! Wrap Rack

DURHAM Manufacturing Corporation
Dept. J-88, Muncie, Indiana

America's Most Complete Line of Folding and Informal Furniture...

News of Products . . .

(Concluded from page 49)

CATALOGS & BOOKLETS

A catalog released by Metalab-Labcraft Division of Norbute Corp., Hicksville, L. I., N. Y., describes a new line of wood laboratory equipment. The catalog, emphasizing laboratory planning, presents suggested layouts and roughing diagrams for all items.

(For Further Details Circle Index Code 0120)

A colorful catalog entitled "Accent on Color" features cafeteria tables and stools in new designs, color selections, and installation ideas. For a copy of the new catalog write to The Chicago Hardware Foundry Co., North Chicago, Ill.

(For Further Details Circle Index Code 0121)

A bulletin recently published by the American Air Filter Co., Louisville 8, Ky., describes a new line of air-conditioning units for schools. The bulletin, No. 786, discusses, in detail, special design features, available accessories, steps for selection of the units, suggested specifications, and other factors pertinent to air-conditioning units.

(For Further Details Circle Index Code 0122)

The 1958 Asphalt Tile Color Classification Chart is offered by the Asphalt and Vinyl Asbestos Tile Institute, New York 17, N. Y. The chart presents new patterns and colors featured by many leading tile manufacturers this year.

(For Further Details Circle Index Code 0123)

An architect's file containing facts on using "Ceramic Veneer" for school exteriors is available from the Federal Seaboard Terra Cotta Corp., New York 16, N. Y.

(For Further Details Circle Index Code 0124)

A new catalog of regulator valves, fittings, and

assemblies is available from the Jordan Corp., Division of OPW Corp., Cincinnati 13, Ohio.

(For Further Details Circle Index Code 0125)

"Specifications for Metal Lathing and Furring" is a 20-page, A.I.A. file booklet available from the Metal Lath Manufacturers Association, Cleveland, Ohio. It contains technical specifications, summaries of the spans and spacing for metal lath and plaster ceilings, and the latest fire-resistive ratings.

(For Further Details Circle Index Code 0126)

"Avtomatika i Telemekhanika," the Soviet "Automatic Control Journal," is now available in the English translation for a nominal sum. The journal, reputed to be the leading Soviet journal in this field, may be obtained from the Instrument Society of America, Pittsburgh 22, Pa.

(For Further Details Circle Index Code 0127)

A new brochure, entitled "Give Your School a New 'A,'" describes in detail sanitation and odor control in school buildings. Copies are available without charge from Airkem, Inc., New York 17, N. Y.

(For Further Details Circle Index Code 0128)

Establishing specifications for school wood- and metal-working tools has been simplified in a new guide sheet. The guide aids in finding factors common to power tools of all manufacturers. For more information, write to Delta Power Tool Division, Rockwell Manufacturing Co., Pittsburgh 8, Pa.

(For Further Details Circle Index Code 0129)

An attractive file folder is offered free by the National Terrazzo & Mosaic Association, Washington 5, D. C. The folder contains 11 data sheets of typical applications of terrazzo. Technical data, resiliency tests, terrazzo and radiant heating, and other pertinent information is included.

(For Further Details Circle Index Code 0130)

"Adhesives and Sealants in Building" is an illustrated report by 22 of the nation's experts in this field. The book treats the present and future status of adhesives and sealants in the building industry. For more information, write to Publications Office, National Academy of Sciences, Washington 25, D. C.

(For Further Details Circle Index Code 0131)

United States Steel Corp., Pittsburgh 30, Pa., has made available a catalog of motion pictures offered by the company for free public viewing.

(For Further Details Circle Index Code 0132)

A colorful brochure, available from the Alsynite Company of America, San Diego 9, Calif., describes uses of translucent Fiberglass in school construction. The folder, No. S-385, explains savings in electrical and maintenance costs by using these installations.

(For Further Details Circle Index Code 0133)

"Atomic Radiation," a booklet available from the RCA Service Co., Camden 8, N. J., explains cautions to be taken after exposure to atomic radiation. The book, retailing at a nominal sum, is being used extensively by colleges and civic and private organizations as a reference text.

(For Further Details Circle Index Code 0134)

A 12-page catalog offers complete descriptions of the line of Ez-A-Way bleachers offered by Berlin Chapman Co., Berlin, Wis. It includes construction features, specifications, capacities, and dimensions of many kinds of bleachers and grandstands.

(For Further Details Circle Index Code 0135)

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MR. CITIZEN JOINS THE SCHOOL TEAM

This recently-published manual for school board members is just the orientation material needed by new or recently-elected board members. It's packed with information and data on the duties and work of the board in every important area, and written by the best authorities in the field. Attractive and colorful!

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8A Bruce Bldg. Milwaukee 1, Wis.

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INDEX TO SCHOOL EQUIPMENT

The index and digest of advertisements below will help you obtain free information, catalogs, and product literature from the advertisements and companies listed in the new products section. Merely encircle the code number assigned to each firm in the request form below, clip the form and mail it to THE AMERICAN SCHOOL BOARD JOURNAL. Your request will receive prompt attention.

Code No.	Page No.	Code No.	Page No.
80	American Desk Mfg. Co. 48	810	Mississippi Glass Co. . . 2
	No. 600 Chair Desk.		Rolled, figured and wired glass.
81	American Playground Device Co. 48	811	Nesbitt, Inc., John J. 40 & 41
	Heavy duty uniform hanger.		Heating and ventilating systems.
82	Arlington Seating Co. . . 46	812	Owens Illinois: Kimble Glass Co. Sub. . . 38 & 39
	School furniture. Write for catalog 58.		Glass block and Toplite panels
83	Butler Mfg. Co. 35	813	Premier Engraving Co. . 50
	Metal buildings.		Engravers
84	Durham Mfg. Corp. . . 49	814	Richards-Wilcox Mfg. Co. 43
	Folding metal chairs.		In-a-Wall steel wardrobes.
85	Griggs Equipment, Inc. 2nd cover	815	Safway Steel Products, Inc. 8
	Tempo desks.		Telescoping gym seats. Write for catalog 168.
86	Herman Nelson Unit Ventilator Products, American Air Filter Co., Inc. . . ins. bet. 4 & 7	816	Southern California Plastering Institute . . . 3rd cover
	Unit ventilator with optional air conditioning.		Genuine Lath and Plaster.
87	Johnson Service Co. . . 1	817	Trane Company . . 44 & 45
	Pneumatic temperature controls.		Air conditioning, heating and ventilating equipment.
88	Kimberly-Clark Corp. . . 36	818	United States Steel Corp. . . ins. bet. 25 & 28
	Kotex rest room vendors. Use coupon page 36 for information and educational program.		Window walls of steel.
89	Krueger Metal Products 4	819	Virco Mfg. Corp. . 4th cover
	Metal chairs and de-mountable chair trucks.		School furniture.
		820	Vogel-Peterson Co., Inc. 49
			Aluminum hat and coat racks.

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These cards are provided for the convenience of THE AMERICAN SCHOOL BOARD JOURNAL readers in requesting information on products, services, booklets, and catalogs offered by the advertisers in this issue.

August, 1958
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400 North Broadway, Milwaukee 1, Wis.

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NEWS OF PRODUCTS FOR THE SCHOOLS

0104 0107 0109 0111 0113 0115 0117 0119 0121 0123 0125 0127 0129 0131 0133 0135
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0106

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